

Instructions



Informer[®] In-Line Fluid Monitoring Package

312013C

For use with paints and coatings with a flashpoint greater than -10°F (-23°C).
Not for use in hazardous locations.

4000 psi (28 MPa, 276 bar) Maximum Working Fluid Pressure



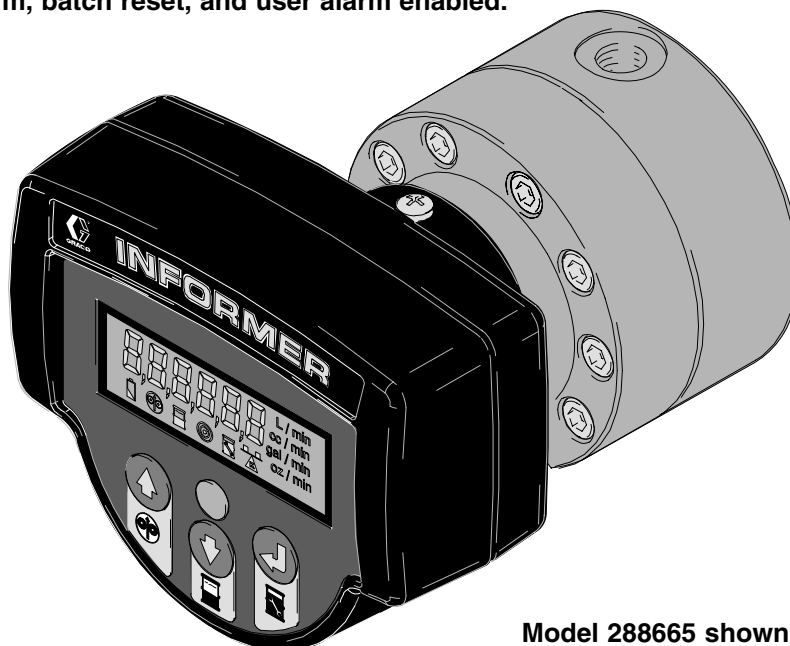
Important Safety Instructions.

Read all warnings and instructions in this manual.

Save these instructions.

See page 2 for Table of Contents and page 3 for List of Models.

Output contacts for batch alarm, batch reset, and user alarm enabled.



Model 288665 shown

PROVEN QUALITY. LEADING TECHNOLOGY.

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List of Models

| Model No. | Parts Included | Not Included |
|---------------|---|---|
| 288665 | G3000 Flow Meter and Informer Display | |
| 288666 | Remote Informer Display with 1/2 in. pipe mounting hardware | G3000 Flow Meter with 50 ft. sensor cable (P/N 243554) Order kit 243554 |
| 288667 | Remote Informer Display with 3/4 in. pipe mounting hardware | G3000 Flow Meter with 50 ft. sensor cable (P/N 243554) Order kit 243554 |
| 288668 | Remote Informer Display with 1 in. pipe mounting hardware | G3000 Flow Meter with 50 ft. sensor cable (P/N 243554) Order kit 243554 |
| 288669 | Remote Informer Display with wall mounting hardware | G3000 Flow Meter with 50 ft. sensor cable (P/N 243554) Order kit 243554 |
| 288670 | Remote Informer Display with din rail mounting hardware | G3000 Flow Meter with 50 ft. sensor cable (P/N 243554) Order kit 243554 |
| 288717 | G3000HR Flow Meter and Informer Display | |

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

|  WARNING | |
|--|--|
|  | <p>SKIN INJECTION HAZARD</p> <p>Spray from leaks, or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Splashing fluid in the eyes or on the skin can also cause serious injury.</p> <ul style="list-style-type: none"> • Fluid injected into the skin might look like just a cut, but it is a serious injury. Get immediate surgical treatment. • Do not stop or deflect fluid leaks with your hand, body, glove, or rag. • Follow the Pressure Relief Procedure on page 13 whenever you: are instructed to relieve pressure; stop operation; or clean, check, or service the equipment. • Tighten all the fluid connections before operating the equipment. • Check the hoses, tubes, and couplings daily. Replace worn, damaged, or loose parts immediately. |
|  | <p>FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD</p> <p>Improper grounding, poor air ventilation, open flames, or sparks can cause a hazardous condition and result in fire or explosion and serious injury.</p> <ul style="list-style-type: none"> • Ground the equipment as instructed in Grounding, page 13. • Never use the flow meter with an electrostatic gun isolation stand. • Keep liquids away from the electronic sensor device. • Follow the material supplier recommendations when flushing or servicing the meter. • Do not service the electronic sensor. Return it to your Graco distributor for service. • If there is any static sparking while using the equipment, stop spraying immediately. Identify and correct the problem. • Keep a fire extinguisher in the work area. |



EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture, malfunction, or start unexpectedly and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are uncertain about usage, call your Graco distributor.
- Do not alter or modify this equipment. Use only genuine Graco parts and accessories.
- Check the equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure of the lowest rated system component. This equipment has a **4000 psi (28 MPa, 276 bar) maximum working pressure**.
- Use fluids or solvents that are compatible with the equipment wetted parts. See the **Technical Data** section of all the equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Comply with all applicable local, state and national fire, electrical and other safety regulations.

Intrinsic Safety

Intrinsically safe equipment that is installed improperly or connected to non-intrinsically safe equipment will create a hazardous condition and can cause fire, explosion, or electric shock. Follow local regulations and the following safety requirements.

- Be sure your installation complies with national, state, and local codes for the installation of an electrical apparatus in a Class I, Group D, Division I Hazardous Location, including all of the local safety fire codes, NFPA 33, NEC 500 and 516, and OSHA 1910.107.
- Equipment that comes in contact with the safety barrier's intrinsically safe terminals must be rated for Intrinsic Safety. This includes DC voltage meters, ohmmeters, cables, and connections. Remove the unit from the hazardous area when troubleshooting.
- The equipment is intrinsically safe when no external electrical components are connected to it. If a printer, computer, or other electrical component is connected, it must be used in conjunction with a safety barrier.
- Do not install equipment approved only for non-hazardous location in a hazardous area. See the ID label for the intrinsic safety rating for your model.
- Do not substitute system components as this may impair intrinsic safety.

Installation

Typical Installation: Remote Informer Display and Meter (in a non-hazardous area)

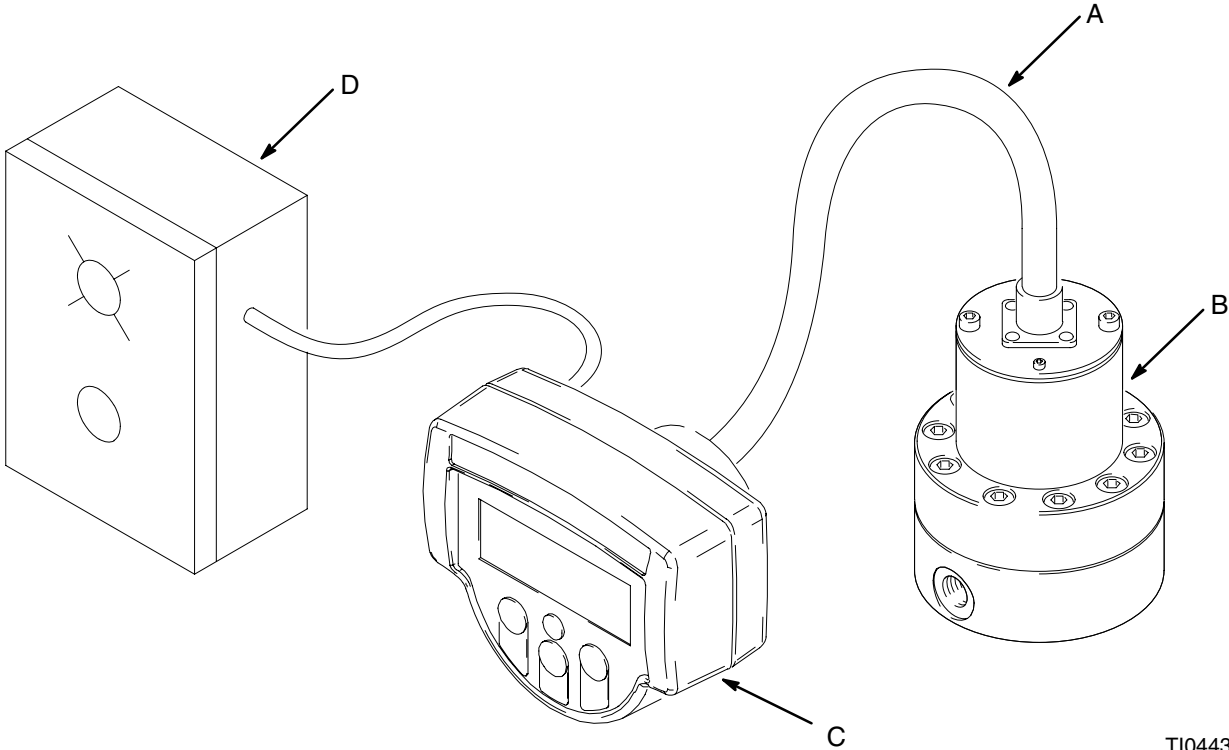


Fig. 1

T10443A

| Ref. No. | Part No. | Description |
|----------|----------|-------------|
| A | 948924 | Cable |
| B | 239716 | Meter |
| C | * | Informer |
| D | ✓ | Control Box |

* See Informer Display Models Chart for part numbers.

✓ Customer supplied component. Includes power supply, lights, push buttons, relays, valves, cable.

Informer Display Models

| Ref. No. | Part No. | Description |
|----------|----------|---|
| C | 288666 | Remote display with 1/2 in. pipe mounting |
| C | 288667 | Remote display with 3/4 in. pipe mounting |
| C | 288668 | Remote display with 1 in. pipe mounting |
| C | 288669 | Remote display with wall mounting |
| C | 288670 | Remote display with din rail mounting |

Installation


The Informer display is an easy to use means of collecting fluid data to help reduce fluid waste and improve processes. The Informer display performs the following functions:

- Monitors flow rate real time
- Outputs a signal when flow rate preset is reached
- Tracks batch totals
- Outputs a signal when a batch total preset is reached
- Tracks grand totals
- Communicates with data reporting software for process or environmental reporting

The Informer display can be directly mounted to the Graco flow meter or remotely mounted from a flow meter. Informer display models are available for mounting on a din rail, wall, or pipe.

The Informer display can be battery powered when it is mounted on the flow meter or externally powered when it is remotely mounted from the meter.

Installing Equipment in Hazardous and Non-hazardous Areas



! WARNING

FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

To reduce the risk of fire, explosion, or electric shock:

- All electrical equipment must only be installed by a qualified electrician.
- Understand and follow your local code and safety regulations for hazardous location wiring of intrinsically safe circuits.

The Graco Informer display and fluid flow meter, are intrinsically safe for Class I; Division 1; Group D hazardous indoor (NEMA 12) locations when installed as shown in Fig. 4, page 10; “Typical Installation: Remote Informer Display in Non-hazardous Area, Meter in Hazardous Area”. Refer to ANSI standards ISA-RP12.6, NEC Article 504 and the Canadian Electrical Code Appendix F.

The wiring schematics on pages 9–10 show typical installations of a flow meter and display. Your installation may consist of different components. Not all the components shown are supplied by Graco.

- To install a flow meter and display in a non-hazardous area, refer to Fig. 3, page 9.
- To install an intrinsically safe flow meter in a hazardous area and the Informer display in a non-hazardous area, refer to Fig. 4, page 10.

Do not use more than 50 ft. (15 m) of cable between the meter and display.

Follow grounding instructions on page 13.

When intrinsically safe barriers are used for hazardous installations, close attention should be paid to selecting an appropriate power supply so that valid signals are applied to the inputs and outputs in accordance with the technical data on page 38.

Cable shields should be connected to the chassis ground, not the power supply common, inside the Informer Display housing. The battery cover screw, mounting adaptor (51) or sensor housing (31) may be used for this ground.

Recommended Cables

For power, communication, and I/O

| Brand | Alpha Part No. | Type |
|-------|----------------|-----------------|
| Alpha | 58612 | 2 pairs, 22 AWG |
| Alpha | 58613 | 3 pairs, 22 AWG |
| Alpha | 58616 | 6 pairs, 22 AWG |

Installation

Flow Meter Installation

Refer to Fig. 2 to locate and install the flow meter, connectors, and fluid shutoff valves.

- Flow volume can only be measured at the location where the flow meter is installed.
- Install a check valve to prevent back-flow. The arrows on the flow meter and check valve show the direction of fluid flow.
- The shutoff valves allow you to isolate the meter for service.

Avoid having dust or foreign matter enter the flow meter by taking the following precautions:

- Thoroughly flush the fluid supply lines before installing the flow meter.
- When installing fittings, make sure that no sealing tape overlaps into the inside of the pipe.
- Install a 100 mesh fluid filter upstream of the flow meter.

Calibrate the meter as instructed on page 19 before using the meter for production.

Refer to the **Dimensional Drawings** on page 37 and **Technical Data** on page 38 for equipment specifications.

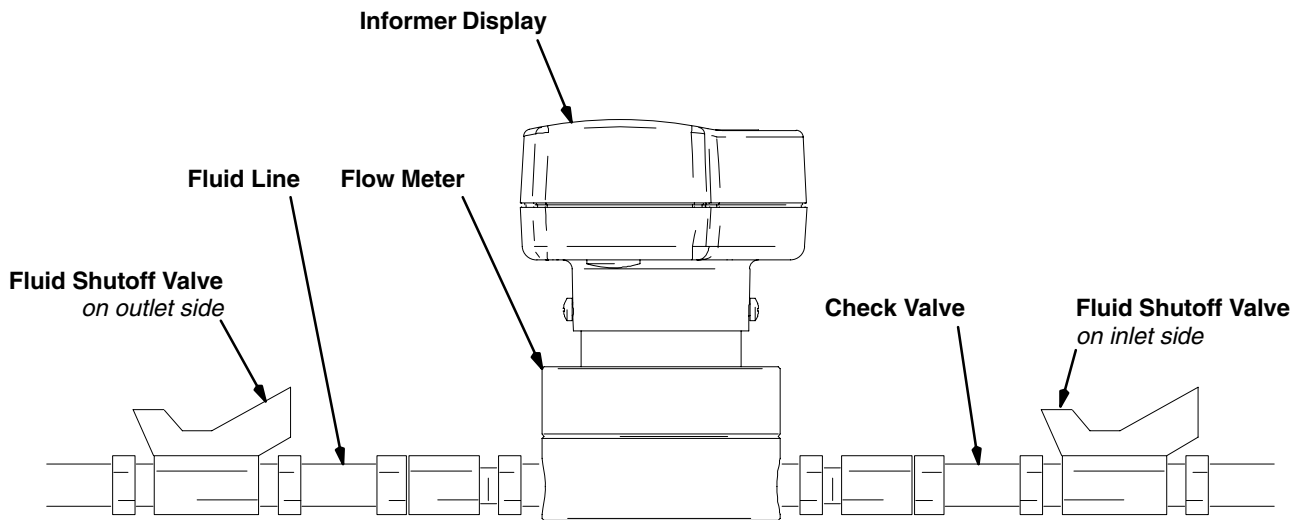


Fig. 2

9632A

Installation

Typical Installation: Remote Informer Display and Meter in Non-hazardous Area

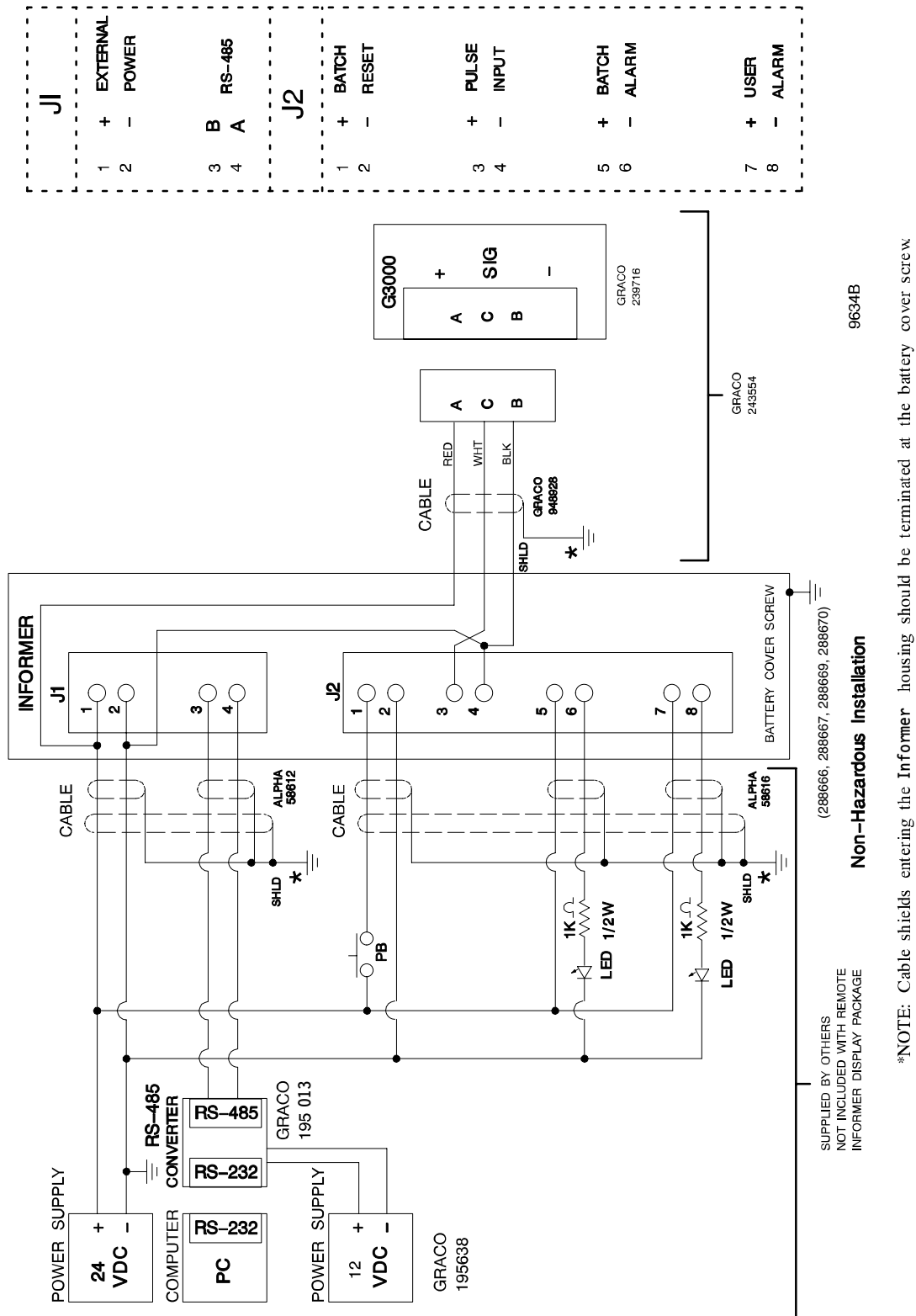


Fig. 3

Installation

Typical Installation: Remote Informer Display in Non-hazardous Area,
Meter In Hazardous Area

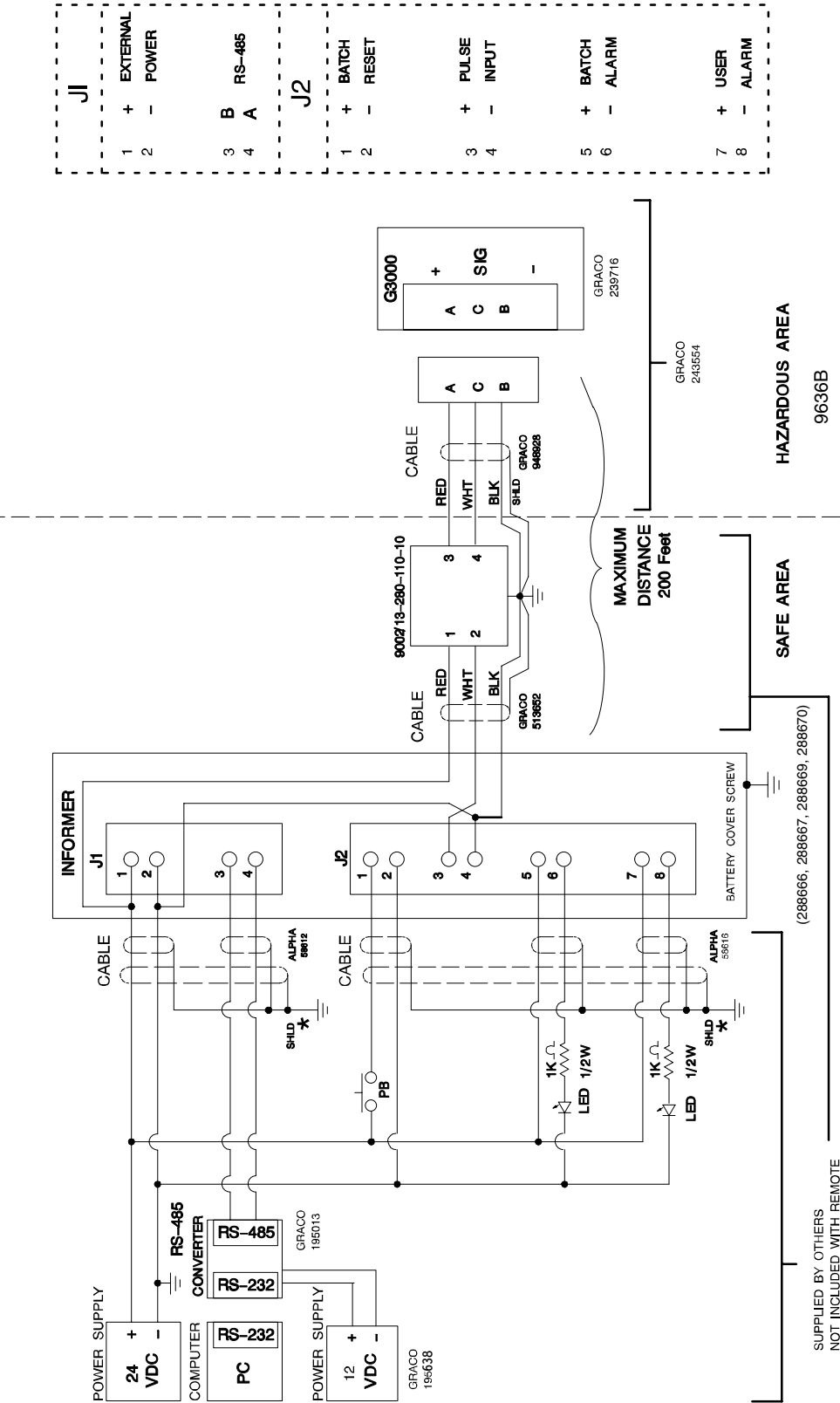


Fig. 4

Installation

Display Jumpers and Terminals

The default jumper positions are shown in Table 1. The hardware configuration of the Informer display can be customized by changing jumper positions and wiring the terminals for the desired configuration.

Jumpers

Jumpers JP1, JP2, and JP3 are 3-pin connectors with 2-pin shunt connectors installed. The pins are numbered 1, 2, and 3. See Fig. 5.

JP1

Jumper JP1 determines the meter pulse source. When pins 1 and 2 are jumpered together, the Informer display is configured to receive pulses from an external meter, which must be connected to terminals 3 and 4 on connector J2. When pins 2 and 3 are jumpered together (the default position for Model 288665), the Informer display is configured to accept pulses from the meter it is mounted on. This position minimizes power consumption for battery operated configurations.

JP2

Jumper JP2 determines the source of power for the Informer display. When pins 1 and 2 are jumpered together, the Informer display is configured to receive power from an external DC power source, which must be connected to terminals 1 and 2 on connector J1. When pins 2 and 3 are jumpered together (the default position for Model 288665), the Informer display is configured to receive power from the internal 9 Volt battery.

JP3

This jumper is not used. It should be removed or left on pins 2 and 3.

Table 1

| Jumpers | Pins | | Defines |
|---------|--|--------------------------|--------------|
| | 1-2 | 2-3 | |
| JP1 | Remote meter connection to pulse input | Display mounted on meter | Pulse source |
| JP2 | External power source | Internal 9 V battery | Power source |
| JP3 | | | Not used |

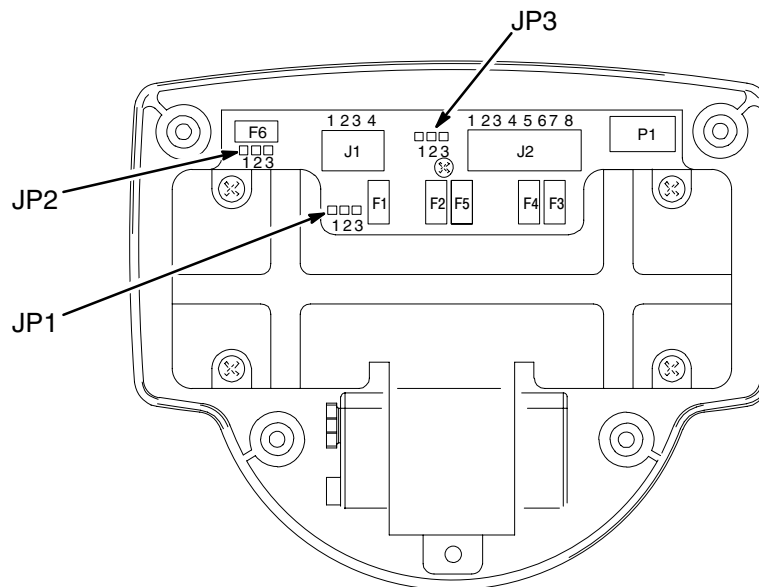


Fig. 5

Inside Front Cover of Informer Display

T10049

Installation

Terminals

Connector J1 terminals are numbered 1 through 4. Connector J2 terminals are numbered 1 through 8. Terminal definitions and typical wiring connections are shown in figures 3 to 4 on pages 9 to 10.

J1 – 1 and 2 External Power

External power is supplied to these terminals. Terminal 1 is the positive connection. The external power connection supplies power for the Informer display's internal circuitry. See the **Technical Data** on page 38 for details.

An external power supply is required for operation when any of the external inputs or outputs described below are used. This includes: external alarms, external batch reset, remote mounted meter, and networking with a computer. Battery operation can only be used with the meter mounted option (Model 243312).

If Graco Power Supply 195638 is used:

For North American power connection, select a power supply cord that fits the following requirements:

- UL Listed and CSA Certified
- 18 AWG
- Terminated in a molded on plug cap rated 125 V, 15 A
- Minimum length of 6 ft (1.8 m)

For European power connection, select a power supply cord that is internationally harmonized and fits the following requirements:

- Marked "<HAR>" 0,75 mm² minimum mm² wire
- Rated 300 V
- PVC insulated jacket
- Molded on plug cap rated 250 V, 10 A

J1 – 3 and 4 RS-485

The Modbus RS-485 communication signals are connected to these terminals. Terminal 3 is the B signal and terminal 4 is the A signal. Due to very low power RS-485 transceivers, the Informer should not be directly connected to a terminated RS-485 network. If terminators are present on the network, an isolator/repeater should be used to isolate the Informer from the rest of the network. The maximum cable length that can be connected to the Informer's RS-485 port is approximately 1200 feet. Isolator/repeaters may be used to extend the entire RS-485 network length and the number of units on the network. Contact Graco customer service for more information.

J2 – 1 and 2 Batch Reset

An external signal applied to this input will reset the Batch Totalizer to zero if the totalizer is a type t1 or t3, or it will preset the Batch Totalizer if it is a type t2 (see setup parameters for details, page 17). Terminal 1 is the positive connection. The input is internally current limited. See the **Technical Data** on page 38 for details on input signal specification.

J2 – 3 and 4 Pulse Input

An external signal applied to this input will increment the internal pulse counter of the Informer display. Terminal 3 is the positive connection. The internal pulse counter is used to increment the Totalizers viewed by the user. The rate of the Totalizer increments are determined by the setup parameters. The input is internally current limited. See the **Technical Data** on page 38 for details on input signal specification.

J2 – 5 and 6 Batch Alarm


The Batch Alarm output is a signal that is turned on by the Informer if a target value is set for the Batch Totalizer and the Batch Alarm output is enabled in the setup parameters. The output is a solid-state device, with terminal 5 as the positive connection. The output is not internally current limited so you should ensure that the output current specification is not exceeded. See the **Technical Data** on page 38 for details on output signal specification.

J2 – 7 and 8 User Alarm

The User Alarm output is a signal that is turned on, based on the parameters that are configured during setup of the Informer display. The output is a solid-state device, with terminal 7 as the positive connection. The output is not internally current limited so you should ensure that the output current specification is not exceeded. See the **Technical Data** on page 38 for details on output signal specification.

Installation

Grounding



! WARNING

FIRE, EXPLOSION, AND ELECTRIC SHOCK HAZARD

Proper electrical grounding of your system is essential. For your safety, read the warning section, **FIRE, EXPLOSION, OR ELECTRIC SHOCK HAZARD**, on page 4.

NOTE: Numbers in parenthesis in the text refer to the reference numbers in the figures (Fig.) and in the parts lists.

1. Follow the instructions in manual 308778 to ground the Graco flow meter and check its electrical grounding continuity.
2. Ground the Informer display by connecting the ground wire (44 or 64) from the screw (35 or 54) to a true earth ground. See Fig. 6.

3. Always ground the fluid supply unit, using one of the following options:
 - a. Mount the meter to a grounded conductive surface, or
 - b. Connect the conductive fluid hose to the meter inlet and outlet, or
 - c. Connect a ground wire to the meter's M6 mounting holes.
4. Never use the flow meter with an electrostatic gun isolation stand.

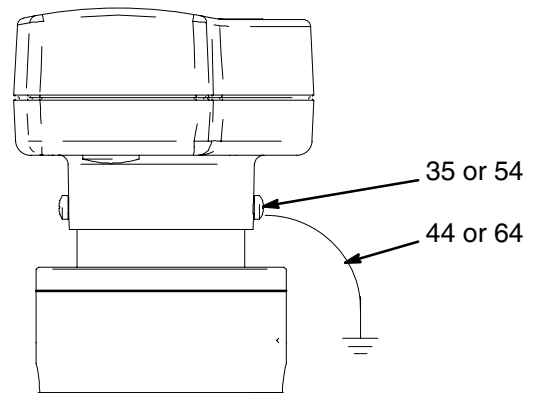


Fig. 6

Operation

Pressure Relief Procedure

! WARNING

SKIN INJECTION HAZARD

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment.

1. Turn off the fluid supply to the meter.
2. Shut off all electrical power to the fluid system.
3. Follow the Pressure Relief Procedure for your fluid system dispensing device.

Flow Meter Operation

For information on Graco flow meter, part no. 239719, see manual 308778. Calibrate the meter as instructed on page 19 before using the meter for production.

! WARNING

COMPONENT RUPTURE HAZARD

Do not exceed the maximum working pressure of your meter or any component or accessory in your system.

! CAUTION

The flow meter gears and bearings can be damaged if they rotate at too high a speed. To avoid high speed rotation, open the fluid valve gradually. Do not over-speed the gear with air or solvent. To prolong meter life, do not use the meter above its maximum flow rate.

Operation

Operating the Informer Display

Press any button to activate the Informer display (bring it out of “Sleep Mode”).

The Informer has two operation modes: Run Mode (page 15) and Setup Mode (page 16).

Icons

As you move through the various Informer screens, you will notice icons appear at the bottom of the screen. The icons for Flow Rate, Batch Totalizer, and Maintenance Totalizer also appear on the Informer buttons. The icons represent various run and setup functions and alarm activation. All of the icons are shown displayed in Fig. 7.

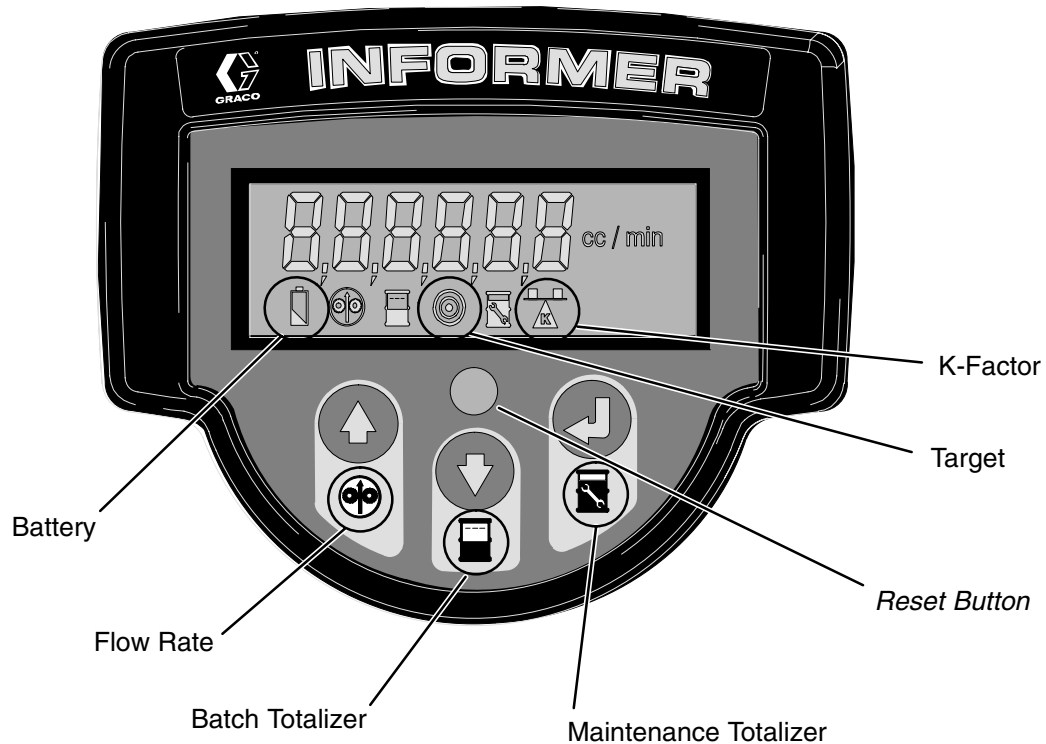


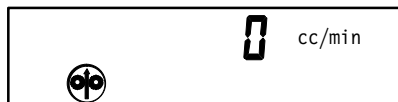
Fig. 7

9658A

Operation

Run Mode

When the Informer display is in Run Mode, the current flow rate, batch totalizer, maintenance totalizer, and grand totalizer values can be viewed for the flow meter the Informer display is connected to.



Flow Rate Monitoring Screen











Alarms


There are two ways the Informer display can be used to notify a user when the Batch Totalizer Target, Main-

tenance Totalizer Target, or the Flow Rate Maximum or Minimum Thresholds have been reached. There is an alert on the Informer screen in the form of a flashing icon when the user is in Run Mode and viewing the related screen information. For example, the flow rate icon will flash in the flow rate, Run mode screen when a threshold value is reached.

Alarm outputs can also be enabled so the Informer display will send a signal to turn on an external alarm to signal an alarm condition. This enables the user to be alerted to an alarm condition regardless of which Informer screen is being viewed. See **Alarm Outputs** on page 18.

Button Functions in Run Mode



| Button | Function |
|--|--|
|   | Flow Rate: Press the up arrow button to display the current flow rate. If either the flow rate maximum or the flow rate minimum threshold values are greater than zero, holding the button down will toggle the display between the flow rate maximum and the flow rate minimum threshold values entered in Setup Mode. Refer to D2 and D3 setup parameter information on page 18. The flow rate icon will flash in this screen when a threshold value is reached. |
|   | Batch Totalizer: Press the down arrow button to display the current batch totalizer. If the batch target value is greater than zero, holding the button down will display the target value entered in Setup Mode. Refer to A2 setup parameter information on page 17. The batch totalizer icon will flash in this screen when the target value is reached. |
|  | Reset Batch Totalizer Pressing the reset button for about one-half second while the batch totalizer is displayed will either set the totalizer to zero if the totalizer is set to count up or preset the totalizer to the target value if the totalizer is set to count down. |
|   | Maintenance Totalizer: Press the enter button to display the current maintenance totalizer. If the maintenance target value is greater than zero, holding the button down will display the target value. The maintenance totalizer icon will flash in this screen when the target value is reached. |
|  | Reset Maintenance Totalizer Pressing the reset button for about one-half second while the maintenance totalizer is displayed will set the totalizer to zero. |
|  | Grand Totalizer: Press the enter and down arrow buttons simultaneously to display the current grand totalizer. |
|  | Enter Setup Mode: Hold down the enter button, then press the up arrow button to enter Setup Mode. |

NOTE: The battery icon  will flash to alert you if a low battery alarm occurs, regardless of which Run Mode screen is displayed.

Operation

Setup Mode

The Setup Mode is used to set parameters for monitoring fluid flow with the Informer display. Setup parameters are described on page 17.

To enter Setup Mode, hold down the enter button , then press the up arrow button . While in Setup Mode, the same button sequence will exit Setup Mode.

Setup Mode is represented by a letter and number on the left side of the display, which indicate the current setup parameter. Setup Mode starts with the A1 (Batch Totalizer Units).












Batch Totalizer Units Setup Screen

Button Functions in Setup Mode

The function of the buttons in Setup Mode varies, depending on which parameter is being set. See the table below for the basic function of the buttons while in Setup Mode. See page 17 for a description of each setup parameter and how to configure them.

NOTE: When setting parameters, the value selected for editing will flash.




| Button | Function |
|--|--|
|   | Enter and Advance to the Next Parameter: Use the enter button to enter the current value selected (flashing) and advance to the next setup parameter. |
|   | Scrolling Through Fields: Use the down arrow button to go to the next field of the current setup parameter. <i>Field:</i> Each of the following numbers is in a separate field: <u>0</u> <u>5</u> . <u>5</u> |
|   | Scrolling Through Selections: Use the up arrow button to scroll through the valid selections of the current setup parameter. <i>Valid Selections:</i> 0 to 9 are valid selections for number fields. L, cc, gal, and oz are valid selections for units. |
|  | Reset Value to Zero: Press the reset button to zero the entire numerical value. |
|   | Exit Setup Mode: Hold down the enter button, then press the up arrow button to exit Setup Mode. |

Operation

Setup Parameters

NOTE: If the related alarm output is enabled, the values set for the Batch Totalizer Target, Maintenance Totalizer Target, and Flow Rate Maximum and Minimum Thresholds determine when an external alarm will be signaled. See **Alarm Outputs** on page 18.


A1 – Batch Totalizer Units

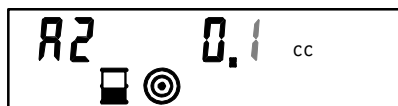
Select liters (L), cubic centimeters (cc), gallons (gal), or ounces (oz) for units of measure. The default setting is cc. Use the up  or down  arrow buttons to scroll through the selections. Press the enter  button to enter the selection.



A2 – Batch Totalizer Target Value

Set a target value for the batch totalizer that will alert a user in Run Mode, viewing the batch totalizer screen, that a batch is complete. The default setting is 0.0.


Repeatedly press the up arrow  button until the desired value appears for the selected digit.



Press the down arrow  button to move to the next digit.

Continue using the arrow buttons to set each digit until the entire number is set to the desired value.



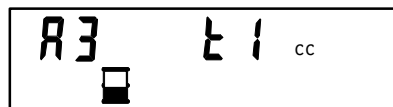
NOTE: Press the reset  button to zero the entire numerical value.

Press the enter  button to enter the selection.

A3 – Batch Totalizer Type

Select t1, t2, or t3 for the batch totalizer type. The default setting is t1, which sets the display to count up from zero to the target value and automatically reset when the target is reached.

- t1: Count Up, auto reset to zero when target value is reached.
- t2: Count down, auto reset to target value when counter is zero.
- t3: Count up, manual reset.



b1 – Maintenance Totalizer Units

Follow the same process as setting the A1 parameter.



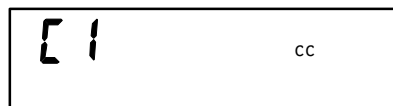
b2 – Maintenance Totalizer Target Value

Set a target value for the maintenance totalizer that will alert a user in Run Mode, viewing the maintenance totalizer screen, when it is time to do preventative maintenance on the fluid handling system. Follow the same process as setting the A2 parameter.



C1 – Grand Totalizer Units

The Grand Totalizer cannot be reset. The reading shows the total amount of fluid that has passed through the unit since it was started up. To set the units, follow the same process as setting the A1 parameter.

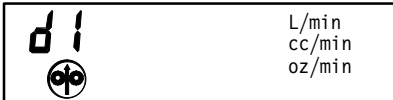


Operation

D1 – Flow Rate Units

Setting the maximum and minimum flow rate threshold values will provide an alarm to alert you that the process is out of specification.

Select liters per minute (L/min), cubic centimeters per minute (cc/min), or ounces per minute (oz/min) for units of measure. The default setting is cc/min. Follow the same process as setting the A1 parameter.



D2 – Flow Rate Maximum Threshold Value

Follow the same process as setting the A2 parameter. The default setting is 0.



D3 – Flow Rate Minimum Threshold Value

Follow the same process as setting the A2 parameter. The minimum threshold value should be no less than 22 * K-factor. The default setting is 0.

E1 – K-factor

The K-factor setting is the scale factor for the meter and is specified in units of cc/pulse. The valid range for K-factor is 0.010 cc/pulse to 1.000 cc/pulse. The default setting is 0.120, which is the K-factor for the meter.

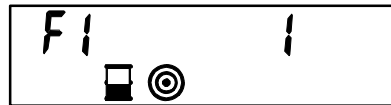


Alarm Outputs

The next series of setup parameters allow you to enable (1) or disable (0) the alarm outputs. If the alarm outputs are enabled, the Informer display will send a signal to turn on an external alarm to signal an alarm condition. The default setting for all the alarms is disabled (0).

F1 – Batch Totalizer Alarm Enable

If enabled (F1=1), the batch alarm output is activated when the batch totalizer reaches the target (if the batch totalizer type is count up) or reaches zero (if the batch totalizer type is count down).



F2 – Diagnostic Alarm Enable

If enabled (F2=1), the user alarm output will activate when the diagnostic status is a non-zero value. The diagnostic status will repeatedly flash on the screen in Run Mode until the fault is corrected.



For example, the display will show E=1 for a diagnostic status of 1. The following is a list of diagnostic status codes:

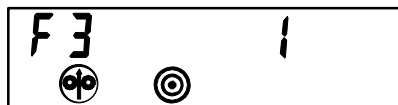
Diagnostic Status Codes

- E = 1 Invalid node address:** The Modbus network node address is set outside the valid range of 1 through 247.
- E = 2 Invalid K-factor:** The K-factor is set outside the valid range of 0.010 cc/pulse to 1.000 cc/pulse.
- E = 3 Invalid Batch Totalizer Type:** The Batch Totalizer Type is set to a value other than t1, t2, or t3.
- E = 4 Invalid Flow Rate Threshold:** The Flow Rate Minimum Threshold value is greater than the Flow Rate Maximum Threshold value.

Operation

F3 – Flow Rate Alarm Enable

If enabled (F3=1), the user alarm output will activate when the flow rate is greater than the flow rate maximum threshold value. The user alarm output is also active if the flow rate is less than the flow rate minimum threshold value for three consecutive samples. The alarm occurs after three consecutive samples to avoid alarms when stopping or starting fluid flow.



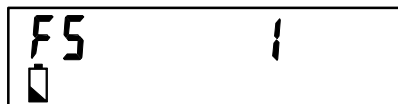
F4 – Maintenance Totalizer Alarm Enable

If enabled (F4=1), the user alarm output will activate when the maintenance totalizer reaches the target value.



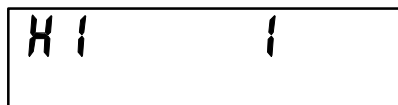
F5 – Battery Alarm Enable

If enabled (F5=1), the user alarm output will activate when the battery voltage falls below the useable limit. The grand totalizer will be saved to non-volatile memory.



H1 – Station ID

Set the station ID between 1 – 246. The default setting is 1. The actual modbus address will be <station ID> +1.









J1 – Battery Powered Operation

If J1 is set to 1, which is the default setting, the Informer display will go into sleep mode after 5 minutes without any activity on the keypad. This helps conserve on battery power. If J1 is set to 0, the Informer display will never enter sleep mode so it is always available to respond to Modbus communications requests and external Batch Reset inputs. When the J1 parameter is displayed the battery icon will flash.



Calibrating the Meter

1. Enter Setup Mode by holding down the enter button , then pressing the up arrow button .
2. Set the Maintenance Totalizer Units [b1] to "cc". See page 17.
3. Set the K-factor [E1] value to "1.000". See page 18.
4. Hold down the enter button , then press the up arrow  button to exit Setup Mode.
5. Press the enter button  to display the Maintenance Totalizer value.
6. Reset the Maintenance Totalizer value by pressing the reset  button for about one-half second.
7. Dispense at least 500 cc of material through the flow meter into a graduated cylinder or beaker.
8. Read the Maintenance Totalizer value.
9. Calculate the new K-factor (cc/pulse) value by dividing the measured volume of dispensed material by the value of the Maintenance Totalizer.
$$\text{K-factor} = \frac{\text{dispensed volume}}{\text{Maintenance Totalizer}}$$
10. Enter Setup Mode.
11. Set the K-factor [E1] value to the calculated value.
12. Verify calibration by exiting Setup Mode, resetting the Maintenance Totalizer, dispensing material, and comparing the volume of the dispensed material with the displayed value of the Maintenance Totalizer.

Operation

Examples

NOTE: In the following examples it is assumed:

- Meter-mounted Informer package (243312) is used
- Default K-factor of 0.12 cc/pulse is accurate
- External power supply is used
- Jumper JP2 is set to position 1–2, all other jumpers and setup parameters not specifically mentioned in the example, are assumed to be in the default position or setting

Example 1: Gun Flow Rate Detection

The informer is used to monitor the flow rate through a gun. If the gun tip is plugged, the flow is restricted and the flow rate is reduced. If the gun tip is worn, the flow rate through the gun is increased.

A power supply is used to power the Informer and the alarm light. The Informer is set up with maximum and minimum flow rate threshold values and the flow alarm is enabled. The alarm light will turn on whenever the maximum flow rate threshold is reached or exceeded, or whenever the flow rate is less than or equal to the minimum threshold value for more than three seconds. If the flow rate drops to zero in less than three seconds (e.g., gun shut off) the alarm light will stay off. Optionally, the Informer's output can be wired to a PLC instead of the alarm light, for integration into a control system.

Example 2: Batch Dispense Control

The Informer is used as a batch dispense controller. The desired batch volume is entered into the Informer's batch totalizer target value. Fluid flows through the pipe until the selected volume is reached and the flow valve is closed. The process repeats when the batch reset button is pressed.

A power supply is used to power the Informer, the batch complete light, the batch reset push button signal, the batch alarm control relay, and the flow valve. The Informer is set up by selecting the batch totalizer units, target value, selecting the count-up with manual reset function, and enabling the batch alarm output. When the batch totalizer reaches the programmed target value, the batch alarm output turns on, pulling in the control relay. The normally open contact of the control relay illuminates the "batch complete" light when the batch alarm is active. The normally closed contact turns off the fluid valve when the batch alarm is active.

Operation

Example 1: Gun Flow Rate Detection (*continued*)

INFORMER SETUP RECIPE Date: _____
Informer S/N: _____

| Setup Parameters | Description | Setup Configuration |
|------------------|---|----------------------------------|
| A1 | Batch Totalizer Units | l, cc, gal, oz |
| A2 | Batch Totalizer Target Value | <input type="text"/> |
| A3 | Batch Totalizer Type t1—Count Up, Auto Reset t2—Count Down, Auto Reset t3—Count Up, Manual Reset | t1 t2 t3 |
| B1 | Maintenance Totalizer Units | l cc gal oz |
| B2 | Maintenance Totalizer Target Value | <input type="text"/> |
| C1 | Grand Totalizer Units | l cc gal oz |
| D1 | Flow Rate Units | l <u>cc</u> gal oz |
| D2 | Flow Rate Maximum Threshold Values | <input type="text" value="150"/> |
| D3 | Flow Rate Minimum Threshold Value | <input type="text" value="50"/> |
| E1 | K-Factor | <input type="text"/> |
| F1 | Batch Totalizer Alarm Enable | 0=No 1=Yes |
| F2 | Diagnostics Alarm Enable | <u>0=No</u> 1=Yes |
| F3 | Flow Rate Enable Alarm | 0=No <u>1=Yes</u> |
| F4 | Maintenance Totalizer Units | <u>0=No</u> 1=Yes |
| F5 | Battery Alarm Enable | <u>0=No</u> 1=Yes |
| H1 | Modbus Node Address | <input type="text"/> |
| J1 | Battery Powered Operation | <u>0=No</u> 1=Yes |

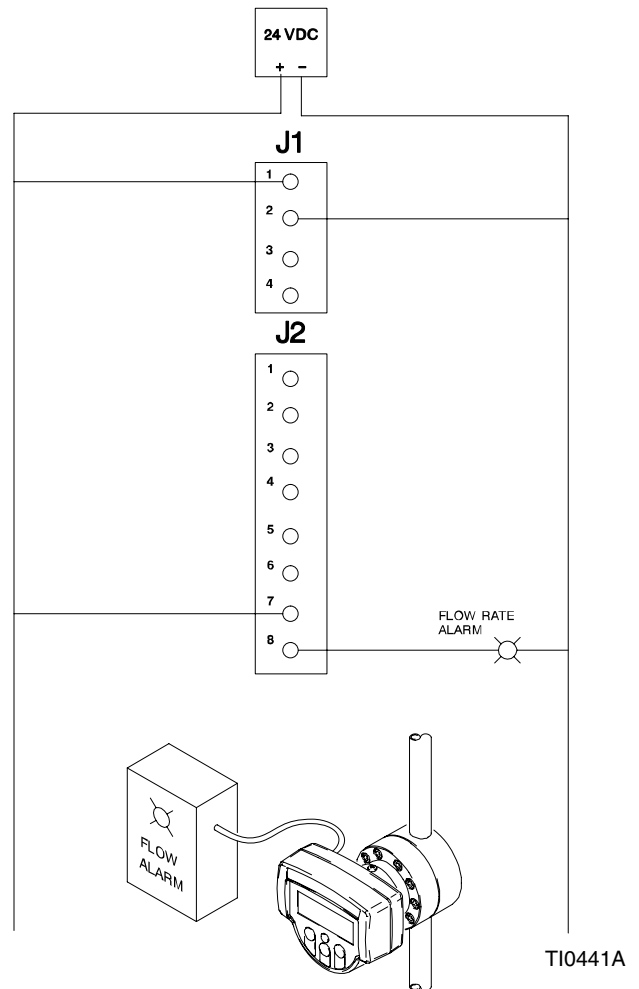


Fig. 8 _____

Application Description

Manual or automatic gun application detecting minimum flow (tip plugging or low material flow) and high flow detection (tip wear or excessive flow).

Operation

Example 2: Batch Dispense Control (*continued*)

INFORMER SETUP RECIPE Date: _____
Informer S/N: _____

| Setup Parameters | Description | Setup Configuration |
|------------------|---|--|
| A1 | Batch Totalizer Units | l <input type="text" value="cc"/> gal oz |
| A2 | Batch Totalizer Target Value | <input type="text" value="185.0"/> |
| A3 | Batch Totalizer Type t1—Count Up, Auto Reset t2—Count Down, Auto Reset t3—Count Up, Manual Reset | t1 t2 <input type="text" value="t3"/> |
| B1 | Maintenance Totalizer Units | l cc gal oz |
| B2 | Maintenance Totalizer Target Value | <input type="text"/> |
| C1 | Grand Totalizer Units | l cc gal oz |
| D1 | Flow Rate Units | l cc gal oz |
| D2 | Flow Rate Maximum Threshold Values | <input type="text"/> |
| D3 | Flow Rate Minimum Threshold Value | <input type="text"/> |
| E1 | K-Factor | <input type="text"/> |
| F1 | Batch Totalizer Alarm Enable | 0=No <input type="text" value="1=Yes"/> |
| F2 | Diagnostics Alarm Enable | 0=No 1=Yes |
| F3 | Flow Rate Enable Alarm | 0=No 1=Yes |
| F4 | Maintenance Totalizer Units | 0=No 1=Yes |
| F5 | Battery Alarm Enable | 0=No 1=Yes |
| H1 | Modbus Node Address | <input type="text"/> |
| J1 | Battery Powered Operation | <input type="text" value="0=No"/> 1=Yes |

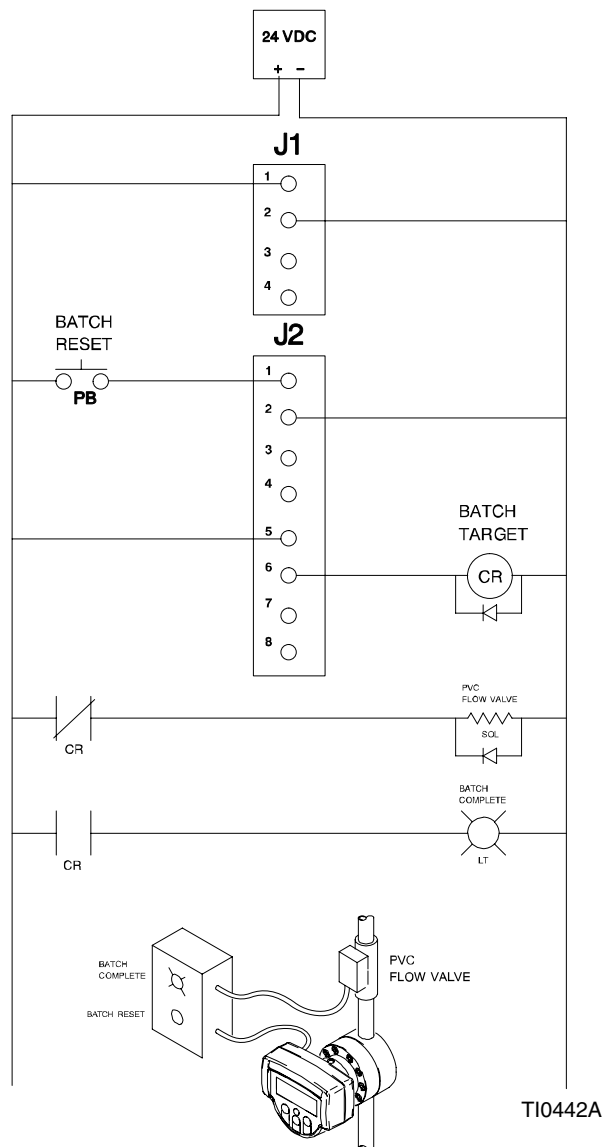


Fig. 9

Application Description

Batch dispense of 185 cc shots for metering PVC.

Operation

INFORMER SETUP RECIPE

Date: _____
Informer S/N: _____

| Setup Parameters | Description | Setup |
|-------------------------|---|----------------------|
| A1 | Batch Totalizer Units | l cc gal oz |
| A2 | Batch Totalizer Target Value | <input type="text"/> |
| A3 | Batch Totalizer Type t1—Count Up, Auto Reset t2—Count Down, Auto Reset t3—Count Up, Manual Reset | t1 t2 t3 |
| B1 | Maintenance Totalizer Units | l cc gal oz |
| B2 | Maintenance Totalizer Target Value | <input type="text"/> |
| C1 | Grand Totalizer Units | l cc gal oz |
| D1 | Flow Rate Units | l cc gal oz |
| D2 | Flow Rate Maximum Threshold Values | <input type="text"/> |
| D3 | Flow Rate Minimum Threshold Value | <input type="text"/> |
| E1 | K-Factor | <input type="text"/> |
| F1 | Batch Totalizer Alarm Enable | 0=No 1=Yes |
| F2 | Diagnostics Alarm Enable | 0=No 1=Yes |
| F3 | Flow Rate Enable Alarm | 0=No 1=Yes |
| F4 | Maintenance Totalizer Units | 0=No 1=Yes |
| F5 | Battery Alarm Enable | 0=No 1=Yes |
| H1 | Modbus Node Address | <input type="text"/> |
| J1 | Battery Powered Operation | 0=No 1=Yes |

Application Description

-
-
-

Troubleshooting

WARNING

SKIN INJECTION HAZARD

To reduce the risk of an injection injury or other serious injury, follow the **Pressure Relief Procedure** on page 13 before checking or servicing the meter assembly.

NOTE: The sensor is not a serviceable part. Replace it if it is malfunctioning.

| Problem | Cause | Solution |
|--|---|--|
| No flow volume displayed at monitoring unit | Flow volume is too low to measure | Increase flow volume |
| | Fluid is not flowing | See Problem: Fluid is not flowing, below |
| | Damaged cable | Replace cable; see page 7 for recommended cables |
| | Improper input voltage to sensor | Make sure input power is 12–24 VDC |
| | Blow F5 fuse | Change fuse; see page 35 for replacement fuses |
| | Jumper JP1 is in the wrong position | Change jumper position; see page 11 |
| | Damaged sensor | Replace sensor |
| Fluid is not flowing | Clogs in fluid line or in meter | Clean fluid line and/or meter; see manual 308778 |
| | Gears worn or damaged | Service meter; see manual 308778 |
| A diagnostic status code is flashing on the Informer display | Setup error | Correct setup; see page 18 |
| Battery icon is flashing | Battery is low | Replace battery; see page 26 |
| Batch and Target symbols are flashing | Batch totalizer setting has been reached | Press reset button to clear alarm and totalizer |
| Flow rate and Target symbols are flashing | Flow rate maximum threshold has been exceeded or flow rate is less than the flow rate minimum threshold value for three consecutive samples | Alarm will clear when the flow rate is within the threshold values |
| Target and Maintenance symbols are flashing | Maintenance totalizer has reached the target value | Press reset button to clear the alarm and totalizer |
| Display will not turn on | Dead battery | Replace battery (page 26) or install external power supply |
| | Blow F1 or F6 fuse | Change fuse; see page 35 for replacement fuses |
| | Jumper JP2 is in the wrong position | Change jumper position; see page 11 |
| Inaccurate flow reading | Faulty flow sensor or meter | Replace sensor or meter |
| | Meter needs calibration | Calibrate meter |
| | Meter needs calibration | Calibrate meter |

Troubleshooting

| Problem | Cause | Solution |
|--|---|---|
| No signal for alarm situation | Incorrect setup | Correct configuration |
| | Incorrect wiring | Correct wiring |
| | Blown F3 fuse (User Alarm) | Replace fuse; see page 35 for replacement fuses |
| | Blown F4 fuse (Batch Alarm) | Replace fuse; see page 35 for replacement fuses |
| | External power is off | Turn on power |
| | Auto reset enabled for batch totalizer | Change to manual reset |
| Cannot retain setup parameters | Flash memory cycle life exceeded | Replace programmed circuit chip |
| Display readout faulty | Excessive static discharge | Replace LCD display |
| | Ambient temperature too high | Lower ambient temperature |
| Keypad failure | Excessive wear | Replace membrane switch |
| Fuses blown | Short circuit | Check wiring |
| | Excessive load | Replace fuse; see page 35 for replacement fuses |
| Communication failure | Incorrect address | Check address configuration |
| | Incorrect communication parameters | Check communication parameters |
| | Incorrect data addresses | Check data addresses |
| | Too much data | Check size of data file |
| | Incorrect cabling | Check cable/wiring |
| | Display is in Sleep Mode | Change Setup parameter J1 to zero Retry communications |
| Flashing “999999” on the display | Display overflow. The value to be displayed contains a value greater than the maximum value that can be displayed | Read the desired parameter with modbus |
| Short battery life | System not configured for low power operation | Set jumpers JP1, JP3 to position 2–3. Setup parameters F1, F2, F3, F4, F5, J1, should be set to “0” (off) Network communications should not be used |
| Display flashes: /min /min /min /min | Informer is in Manufacturing Test mode | To exit Manufacturing Test mode, press the Up, Down, and Enter buttons simultaneously. The Informer will now be in the Setup mode. Hold the Enter button, then press the Up arrow button to exit the Setup mode |

Maintenance

Battery Replacement (See Fig. 10)

WARNING



FIRE AND EXPLOSION HAZARD

To reduce the risk of fire or explosion:

- Do not remove or install the battery in a hazardous location.
- The internal (9a and 9b or 16) and external (44 or 64) ground wires for the display must be correctly connected.

NOTE:

- See page 35 for battery part numbers.
- Numbers in parenthesis in the text refer to the reference numbers in the figures (Fig.) and in the parts lists.
- The Grand Totalizer value is stored to non-volatile memory when the battery low condition first appears. If the battery low icon has been displayed for a significant amount of time before the battery is replaced, the flow data since the icon appeared will be lost. The Grand Totalizer value can be manually stored to non-volatile memory by entering the setup mode and exiting setup mode. If the Grand Totalizer is manually stored in this way before changing the battery, no data will be lost.

Display Assembly Mounted on the Meter

1. Remove the display mounting screws (35) and the external ground wire (44) from the sensor (31). Pull the sensor out of the lower housing (11).
2. Remove the screw (43) and disconnect the internal ground wire (9a) from the sensor (31).
3. Unplug the connector (9) from the sensor circuit board by pressing the connector latch (B), then pulling the connector off the receptacle (C).
4. Move the display assembly (A) to a non-hazardous location.
5. Remove the four screws (12) and remove the display assembly lower housing (11).
6. Remove the one screw (8) that secures the cover (7) and internal ground wire (9b) to the battery (3).

7. Replace the battery (3). The battery must be installed with the correct polarity.
8. Put the internal ground wire (9b) connector in place and install the screw (8).
9. Check the condition of the gasket (10) and replace it if it is damaged.
10. Guide the wire connector (9) through the lower housing (11) and secure the lower housing to the upper housing (1) with the screws (12).
11. Plug the connector (9) into the sensor circuit board receptacle (C).
12. Secure the internal ground wire (9a) to the sensor (31) with the screw (43).
13. Push the sensor (31) back into the housing (11).
14. Put the external ground wire (44) back in place and secure the display assembly (A) to the sensor (31) with the screws (35).

Remotely Mounted Display Assembly

1. Remove the display mounting screws (54) and the external ground wire (64) from the adapter (51).
2. Remove the screw (63) and disconnect the internal ground wire (16) from the adapter (51). Pull the adapter out of the lower housing (11).
3. Remove the four screws (12) and remove the display assembly lower housing (11).
4. Unplug the removeable terminal blocks from their receptacles (14, 15).
5. Move the display assembly (A) to a non-hazardous location.
6. Remove the one screw (8) that secures the cover (7) and internal ground wire (16) to the battery (3).
7. Replace the battery (3). The battery must be installed with the correct polarity.
8. Put the internal ground wire (16) connector in place and install the screw (8).

Maintenance

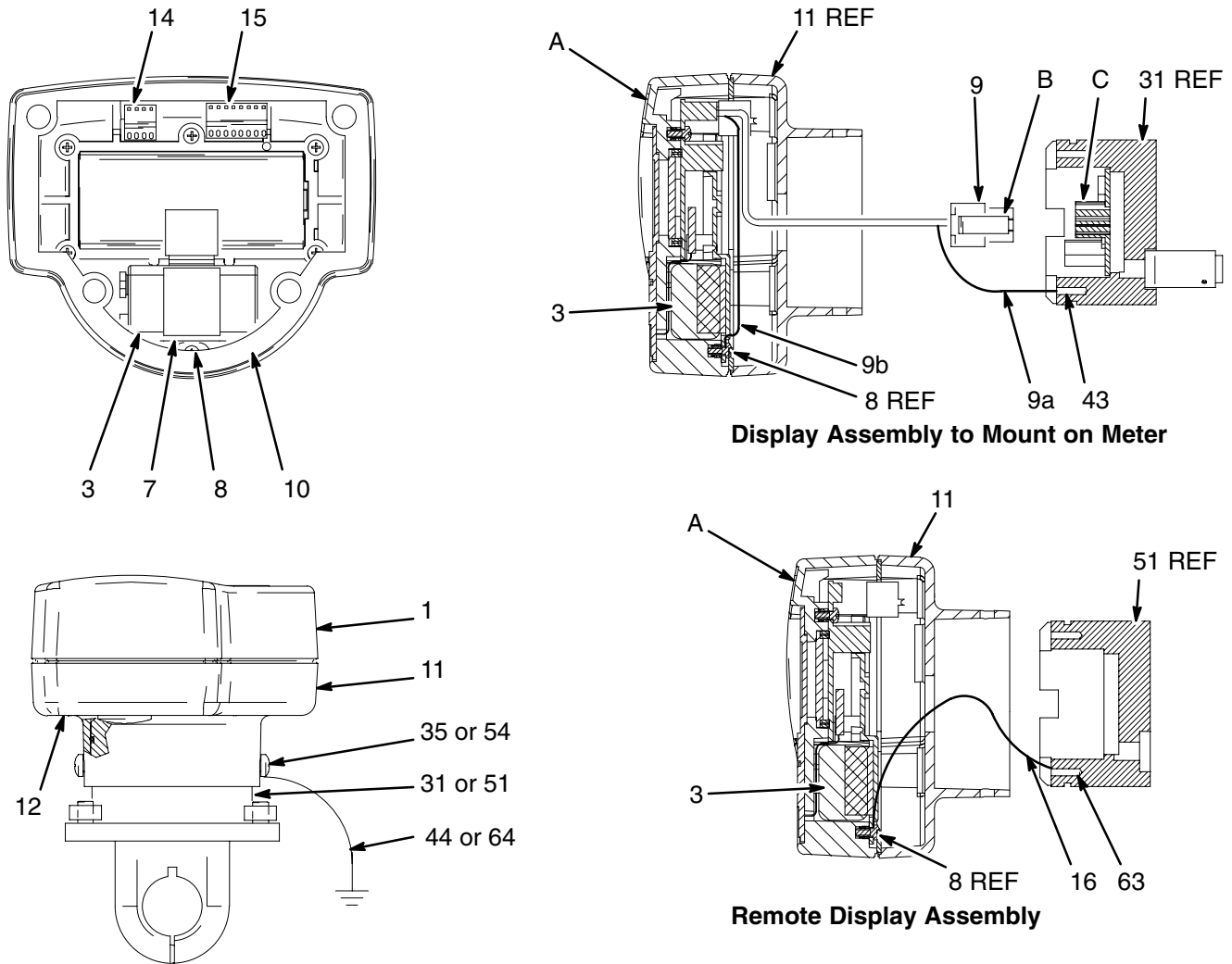


Fig. 10

9631A

Remotely Mounted Display Assembly (continued)

9. Plug the removable terminal blocks into their receptacles (14, 15).
10. Check the condition of the gasket (10) and replace it if it is damaged.
11. Guide the internal ground wire (16) through the lower housing (11) and secure the lower housing to the upper housing (1) with the screws (12).

12. Secure the internal ground wire (16) to the adapter (51) with the screw (63).
13. Push the adaptor (51) back into the housing (11).
14. Put the external ground wire (64) back in place, and secure the display assembly to the adapter (51) with the screws (54).

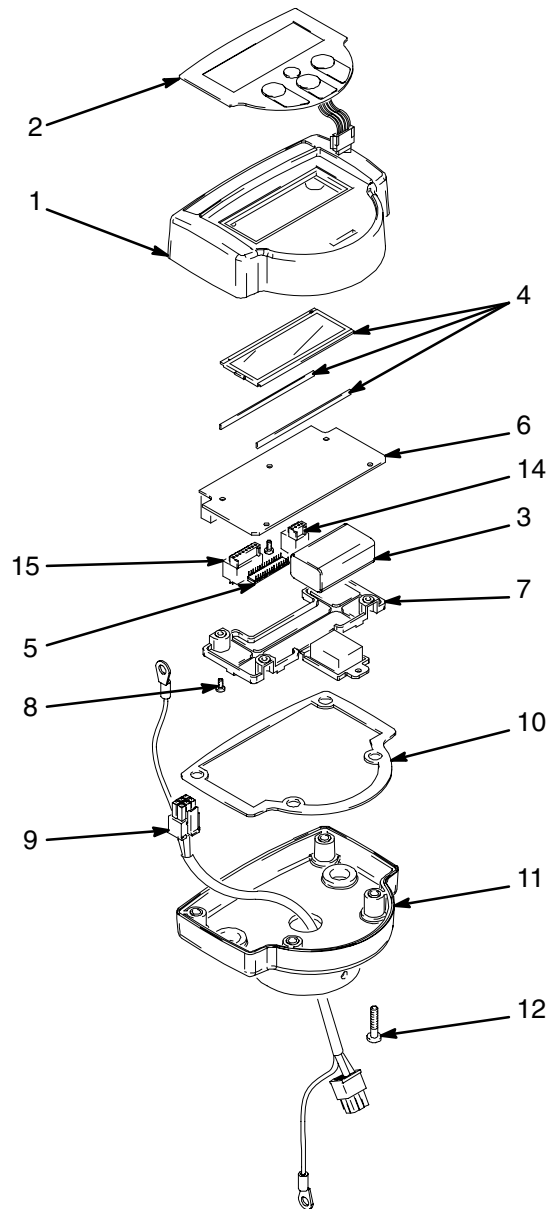
Flow Meter Maintenance

For flow meter maintenance information, see manual 308778.

Parts

Model 288680

Informer Display, for installation on meter (meter not included)



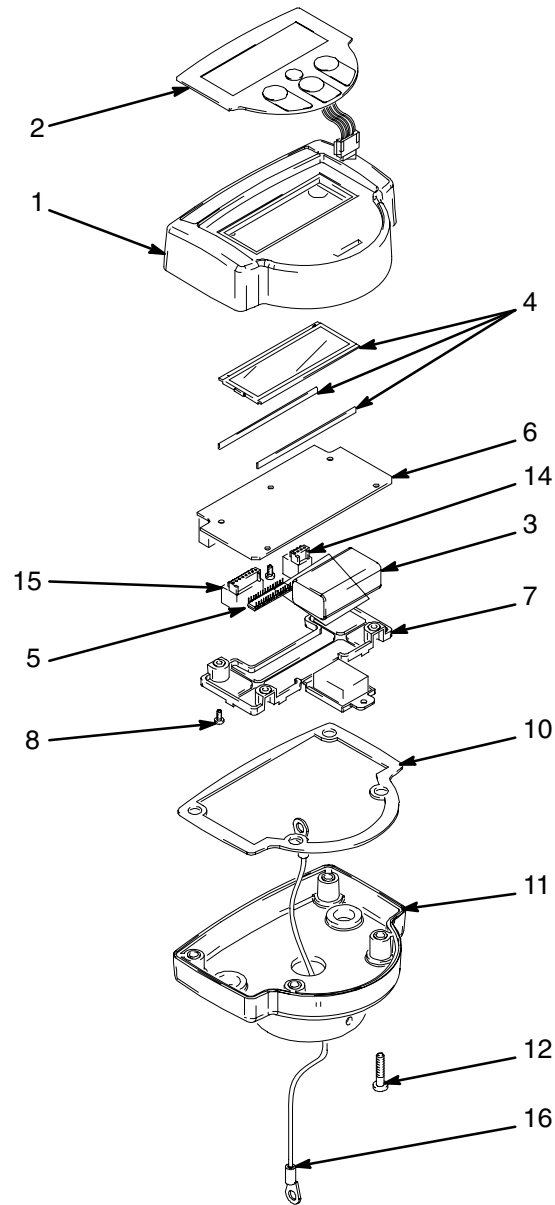
9630B

| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|---|------|----------|----------|---|------|
| 1 | 193647 | HOUSING, upper display | 1 | 7 | 193650 | COVER, circuit board | 1 |
| 2 | 243552 | KIT, membrane switch | 1 | 8 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6 | 6 |
| 3 | | BATTERY, 9 volt (See chart on page 35) | 1 | 9 | 195880 | ASSEMBLY, cable, w/ connectors | 1 |
| 4 | 243551 | KIT, LCD display | 1 | 10 | 193649 | GASKET | 1 |
| 5 | 243549 | KIT, programmed integrated circuit chip | 1 | 11 | 193648 | HOUSING, lower display | 1 |
| 6 | 280529 | KIT, circuit board, display; includes item 6a | 1 | 12 | 105333 | SCREW, mach., pan hd., M4 x 20 | 4 |
| 6a | 115839 | • JUMPER; not shown | 3 | 14 | 115732 | TERMINAL, blocks | 1 |
| | | | | 15 | 115733 | TERMINAL, blocks | 1 |

Parts

Model 288679

Informer Display, for remote installation



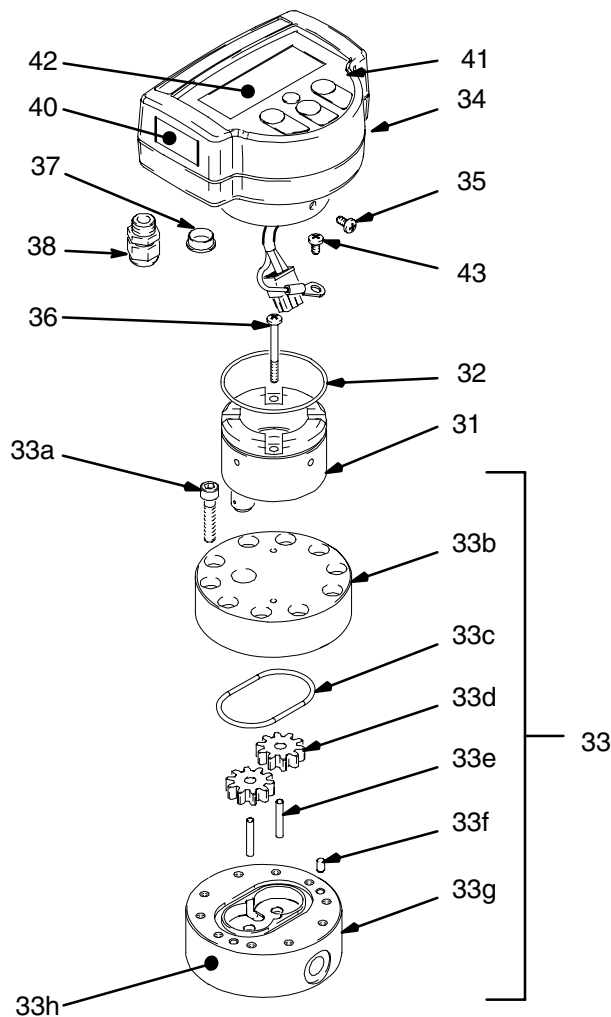
9630A

| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|---|------|----------|----------|---|------|
| 1 | 193647 | HOUSING, upper display | 1 | 8 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6 | 6 |
| 2 | 243552 | KIT, membrane switch | 1 | 10 | 193649 | GASKET | 1 |
| 3 | | BATTERY, 9 volt (<i>See chart on page 35</i>) | 1 | 11 | 193648 | HOUSING, lower display | 1 |
| 4 | 243551 | KIT, LCD display | 1 | 12 | 105333 | SCREW, mach., pan hd., M4 x 20 | 4 |
| 5 | 243549 | KIT, programmed integrated circuit chip | 1 | 14 | 115732 | TERMINAL, blocks | 1 |
| 6 | 280529 | KIT, circuit board, display; includes item 6a | 1 | 15 | 115733 | TERMINAL, blocks | 1 |
| 6a | 115839 | • JUMPER; not shown | 3 | 16 | 196141 | WIRE, ground, internal | 1 |
| 7 | 193650 | COVER, circuit board | 1 | | | | |

Parts

Model 288665

Informer Display, with Graco G3000 flow meter



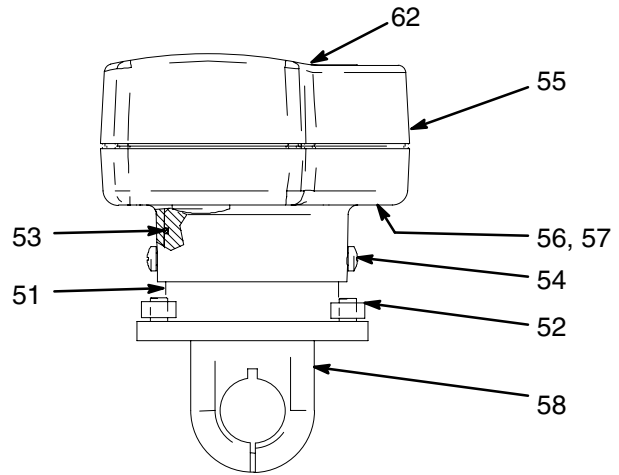
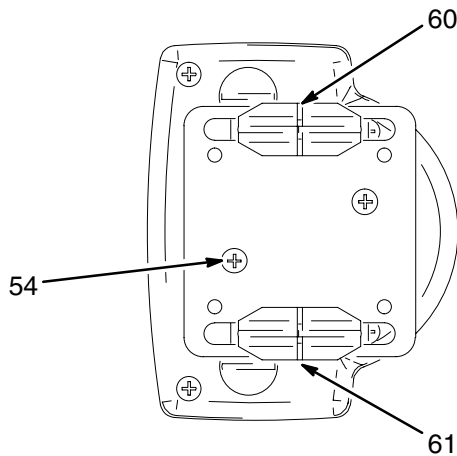
9630A

| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|----------|----------|---|------|
| 31 | 243309 | SENSOR | 1 | 36 | 105892 | SCREW, mach., pan hd., M4 x 40 | 2 |
| 32 | 113517 | O-RING, fluoroelastomer | 1 | 37 | 115698 | PLUG, dome | 2 |
| 33 | 239719 | BODY, gear meter, includes items 33a–33h | 1 | 38 | 195889 | BUSHING, strain relief | 2 |
| 33a | 110580 | • SCREW, cap, socket hd., M6 x 30 | 12 | 40▲ | 195909 | LABEL, warning, English | 1 |
| 33b | * | • HOUSING, meter upper | 1 | 41▲ | 195910 | LABEL, warning, French | 1 |
| 33c | 110588 | • O-RING; PTFE | 1 | 42 | 195867 | PAINT SHIELD KIT, includes 10 shields | 1 |
| 33d | 239718 | • GEAR ASSEMBLY | 2 | 43 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6 | 1 |
| 33e | 192383 | • SHAFT, gear | 2 | 44 | 222011 | WIRE, ground, external; not shown | 1 |
| 33f | 192387 | • PIN, dowel | 2 | | | | |
| 33g | * | • HOUSING, meter, lower | 1 | | | | |
| 33h | 290579 | • LABEL, identification | 1 | | | | |
| 34 | 288680 | DISPLAY, Informer; See parts on page 28 | 1 | | | | |
| 35 | 195874 | SCREW, mach., phillips pan hd., M4 x 8 | 2 | | | | |

* Not a replacement part. Order item 33, gear meter assembly.

▲ Replacement Warning labels are available at no cost.

Parts



9639A

Model 288666

Informer Display, remote installation, 1/2 in. pipe mount

| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|----------|----------|--|------|
| 51 | 196301 | ADAPTER | 1 | 58 | 195868 | CLAMP, cushion, u-bolt, for 1/2 in. pipe | 2 |
| 52 | 195857 | PLATE, adapter mounting | 1 | 60▲ | 195909 | LABEL, warning, English | 1 |
| 53 | 113517 | O-RING, fluoroelastomer | 1 | 61▲ | 195910 | LABEL, warning, French | 1 |
| 54 | 195874 | SCREW, mach., phillips pan hd., M4 x 8 | 4 | 62 | 195867 | PAINT SHIELD KIT, includes 10 shields | 1 |
| 55 | 288679 | DISPLAY, remote; See page 29 for parts | 1 | 63 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6; not shown | 1 |
| 56 | 115698 | PLUG, dome | 2 | 64 | 222011 | WIRE, ground, external; not shown | 1 |
| 57 | 195889 | BUSHING, strain relief | 2 | | | | |

Model 288667

Informer Display, remote installation, 3/4 in. pipe mount

| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|----------|----------|--|------|
| 51 | 196301 | ADAPTER | 1 | 60▲ | 195909 | LABEL, warning, English | 1 |
| 52 | 195857 | PLATE, adapter mounting | 1 | 61▲ | 195910 | LABEL, warning, French | 1 |
| 53 | 113517 | O-RING, fluoroelastomer | 1 | 62 | 195867 | PAINT SHIELD KIT, includes 10 shields | 1 |
| 54 | 195874 | SCREW, mach., phillips pan hd., M4 x 8 | 4 | 63 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6; not shown | 1 |
| 55 | 288679 | DISPLAY, remote; See page 29 for parts | 1 | 64 | 222011 | WIRE, ground, external; not shown | 1 |
| 56 | 115698 | PLUG, dome | 2 | | | | |
| 57 | 195889 | BUSHING, strain relief | 2 | | | | |
| 58 | 195869 | CLAMP, cushion, u-bolt, for 3/4 in. pipe | 2 | | | | |

▲ Replacement Warning labels are available at no cost.

Parts

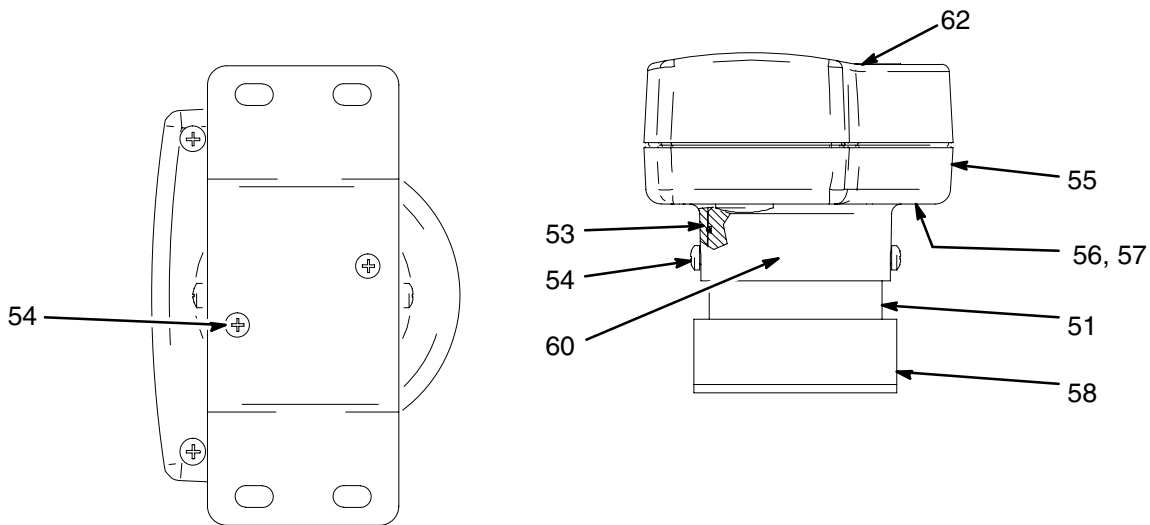
Model 288668

Informer Display, remote installation, 1 in. pipe mount
See drawing on page 31

| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|----------|----------|--|------|
| 51 | 196301 | ADAPTER | 1 | 58 | 195870 | CLAMP, cushion, u-bolt, for 1 in. pipe | 2 |
| 52 | 195857 | PLATE, adapter mounting | 1 | 60▲ | 195909 | LABEL, warning, English | 1 |
| 53 | 113517 | O-RING, fluoroelastomer | 1 | 61▲ | 195910 | LABEL, warning, French | 1 |
| 54 | 195874 | SCREW, mach., phillips pan hd., M4 x 8 | 4 | 62 | 195867 | PAINT SHIELD KIT, includes 10 shields | 1 |
| 55 | 288679 | DISPLAY, remote; See page 29 for parts | 1 | 63 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6; not shown | 1 |
| 56 | 115698 | PLUG, dome | 2 | 64 | 222011 | WIRE, ground, external; not shown | 1 |
| 57 | 195889 | BUSHING, strain relief | 2 | | | | |

Model 288669

Informer Display, remote installation, wall mount



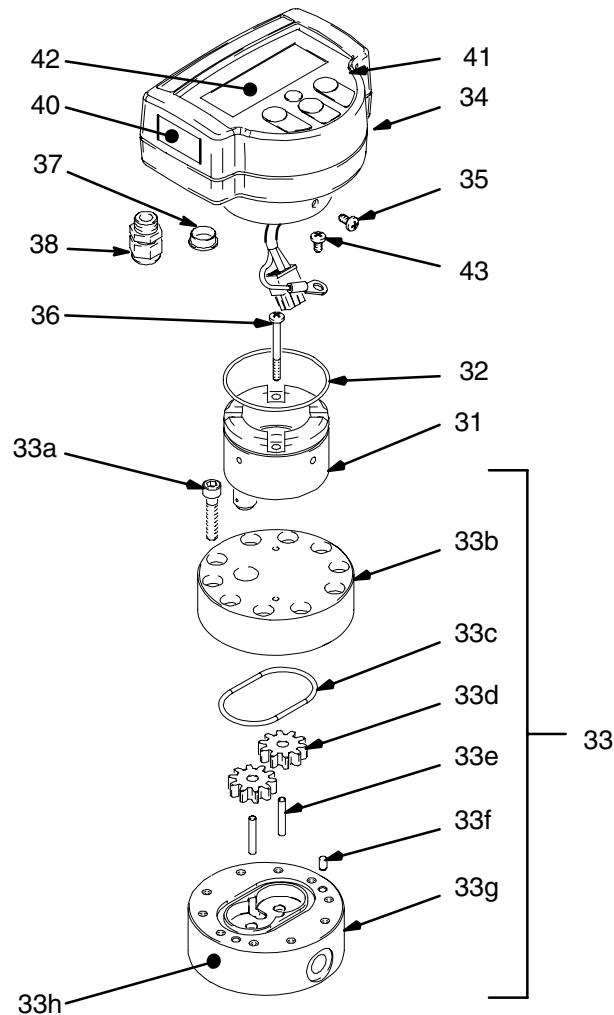
| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|----------|----------|--|------|
| 51 | 196301 | ADAPTER | 1 | 60▲ | 195909 | LABEL, warning, English | 1 |
| 53 | 113517 | O-RING, fluoroelastomer | 1 | 61▲ | 195910 | LABEL, warning, French; not shown | 1 |
| 54 | 195874 | SCREW, mach., phillips pan hd., M4 x 8 | 4 | 62 | 195867 | SHIELD, paint | 1 |
| 55 | 288679 | DISPLAY, remote; See page 29 for parts | 1 | 63 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6; not shown | 1 |
| 56 | 115698 | PLUG, dome | 2 | 64 | 222011 | WIRE, ground, external; not shown | 1 |
| 57 | 195889 | BUSHING, strain relief | 2 | | | | |
| 58 | 195856 | BRACKET, wall mount | 1 | | | | |

▲ Replacement Warning labels are available at no cost.

Parts

Model 288717

Informer Display, with Graco G3000HR flow meter



9630B

| Ref. No. | Part No. | Description | Qty. | Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|----------|----------|---|------|
| 31 | 243309 | SENSOR | 1 | 36 | 105892 | SCREW, mach., pan hd., M4 x 40 | 2 |
| 32 | 113517 | O-RING, fluoroelastomer | 1 | 37 | 115698 | PLUG, dome | 2 |
| 33 | 244291 | BODY, gear meter, includes items 33a–33h | 1 | 38 | 195889 | BUSHING, strain relief | 2 |
| 33a | 110580 | • SCREW, cap, socket hd., M6 x 30 | 12 | 40▲ | 195909 | LABEL, warning, English | 1 |
| 33b | * | • HOUSING, meter upper | 1 | 41▲ | 195910 | LABEL, warning, French | 1 |
| 33c | 110588 | • O-RING; PTFE | 1 | 42 | 195867 | PAINT SHIELD KIT, includes 10 shields | 1 |
| 33d | 244290 | • GEAR ASSEMBLY | 2 | 43 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6 | 1 |
| 33e | 197142 | • SHAFT, gear | 2 | 44 | 222011 | WIRE, ground, external; not shown | 1 |
| 33f | 192387 | • PIN, dowel | 2 | | | | |
| 33g | * | • HOUSING, meter, lower | 1 | | | | |
| 33h | 291643 | • LABEL, identification | 1 | | | | |
| 34 | 288680 | DISPLAY, Informer; See parts on page 28 | 1 | | | | |
| 35 | 195874 | SCREW, mach., phillips pan hd., M4 x 8 | 2 | | | | |

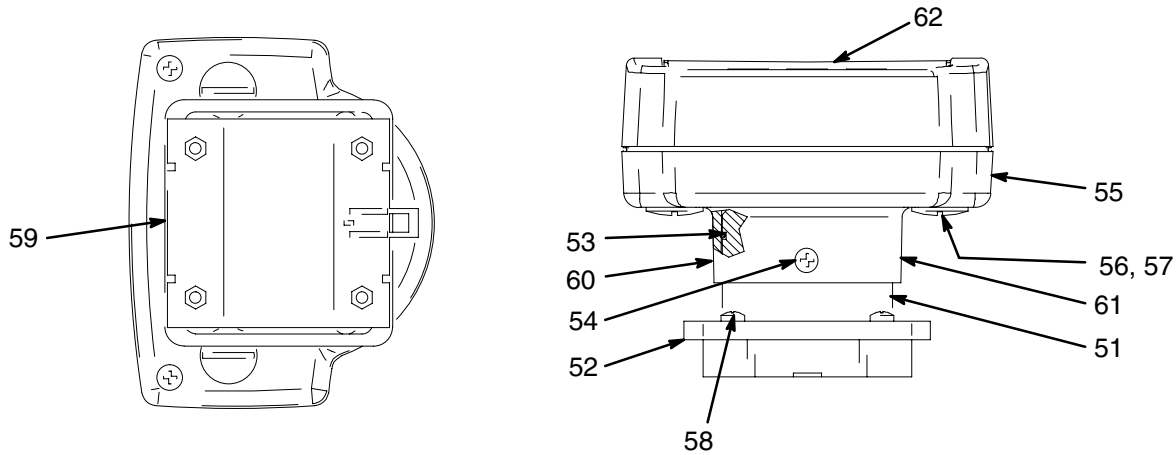
* Not a replacement part. Order item 33, gear meter assembly.

▲ Replacement Warning labels are available at no cost.

Parts

Model 288670

Informer Display, remote installation, din rail mount



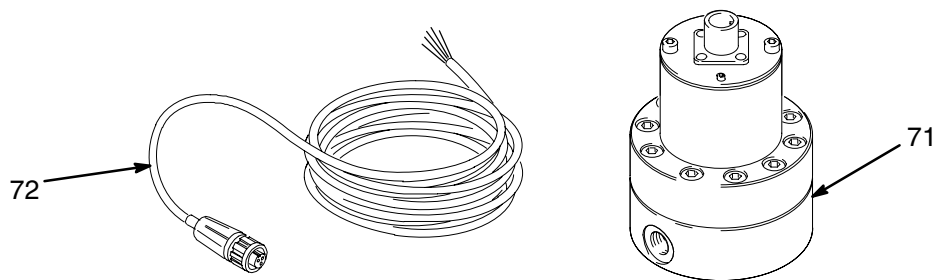
| Ref. No. | Part No. | Description | Qty. |
|----------|----------|---|------|
| 51 | 196301 | ADAPTER | 1 |
| 52 | 195857 | PLATE, adapter mounting | 1 |
| 53 | 113517 | O-RING, fluoroelastomer | 1 |
| 54 | 195874 | SCREW, mach., phillips pan hd., M4 x 8 | 2 |
| 55 | 288679 | DISPLAY, remote; See page 29 for parts | 1 |
| 56 | 115698 | PLUG, dome | 2 |
| 57 | 195889 | BUSHING, strain relief | 2 |
| 58 | 195875 | SCREW, mach., phillips pan hd., M4 x 16 | 4 |

| Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|
| 59 | 195871 | CLAMP, din rail | 1 |
| 60▲ | 195909 | LABEL, warning, English | 1 |
| 61▲ | 195910 | LABEL, warning, French | 1 |
| 62 | 195867 | SHIELD, paint | 1 |
| 63 | 195853 | SCREW, mach. phillips pan hd., M2.5 x 6; not shown | 1 |
| 64 | 222011 | WIRE, ground, external; not shown | 1 |

▲ Replacement Warning labels are available at no cost.

Model 243554

Remote G3000 Flow Meter Installation Kit

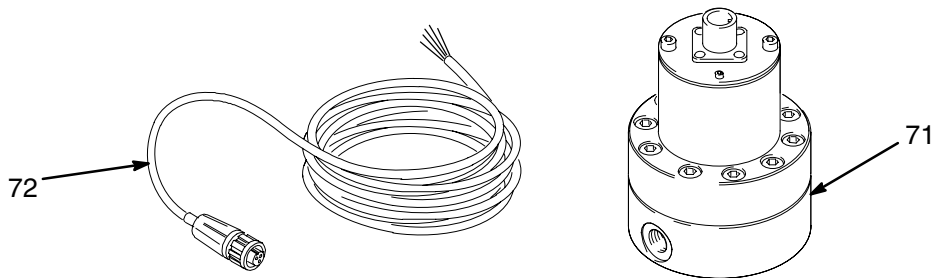


| Ref. No. | Part No. | Description | Qty. |
|----------|----------|---|------|
| 71 | 239716 | G3000 FLOW METER; See manual 308778 for parts | 1 |
| 72 | 948924 | CABLE ASSY., 50 ft. (15.24 m) | 1 |

Parts

Model 234106

Remote G3000HR Flow Meter Installation Kit



T10077

| Ref. No. | Part No. | Description | Qty. |
|----------|----------|--|------|
| 71 | 244292 | G3000HR FLOW METER; See manual 308778 for parts | 1 |
| 72 | 948924 | CABLE ASSY., 50 ft. (15.24 m) | 1 |

9 Volt Battery for Display

| Brand | Part No. | Type |
|------------|----------|----------|
| Ultralife* | U9VL | Lithium |
| Duracell | MN1604 | Alkaline |
| Duracell | PC1604 | Alkaline |
| EverReady | EN22 | Alkaline |
| EverReady | 522 | Alkaline |

* An Ultralife battery is shipped with the Informer display in order to replace the Alkaline test battery. A Lithium battery is recommended for extended battery life.

Fuses

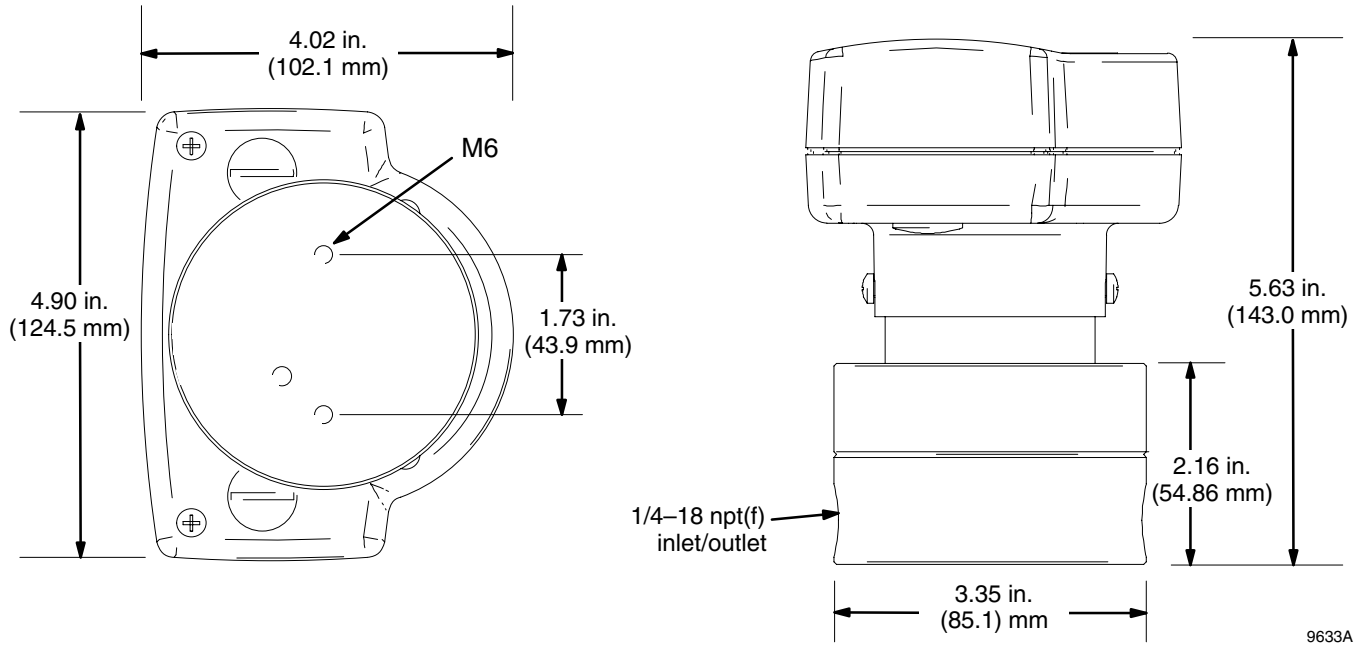
| Fuse | Value | Description | Wickman Part No. | Graco Part No. |
|------|-------|-----------------------|------------------|----------------|
| F1 | 0.1 A | External power source | 3950100044 | 115838 |
| F2 | 0.1 A | Batch reset input | 3950100044 | 115838 |
| F3 | 0.1 A | User alarm output | 3950100044 | 115838 |
| F4 | 0.1 A | Batch alarm output | 3950100044 | 115838 |
| F5 | 0.1 A | Pulse signal input | 3950100044 | 115838 |
| F6 | 0.1 A | Battery power source | 3950100044 | 115838 |

NOTE: All fuses are fast acting, style TE5.

Dimensions

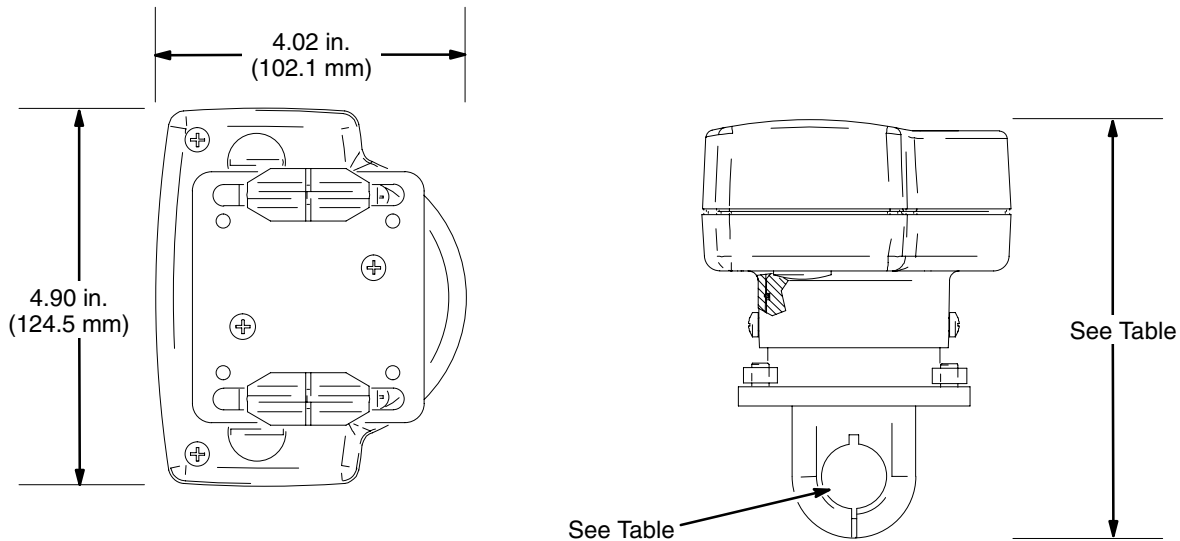
Model 288665 and 288717

Informer Display, with Graco flow meter



Model 288666, 288667, 288668

Informer Display, pipe mount

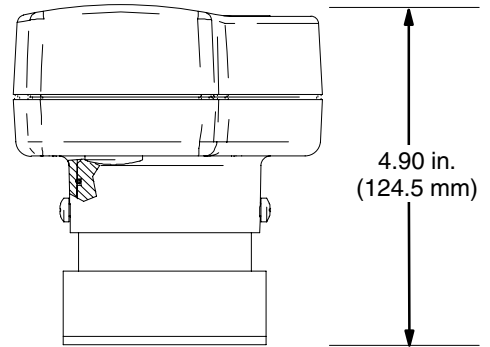
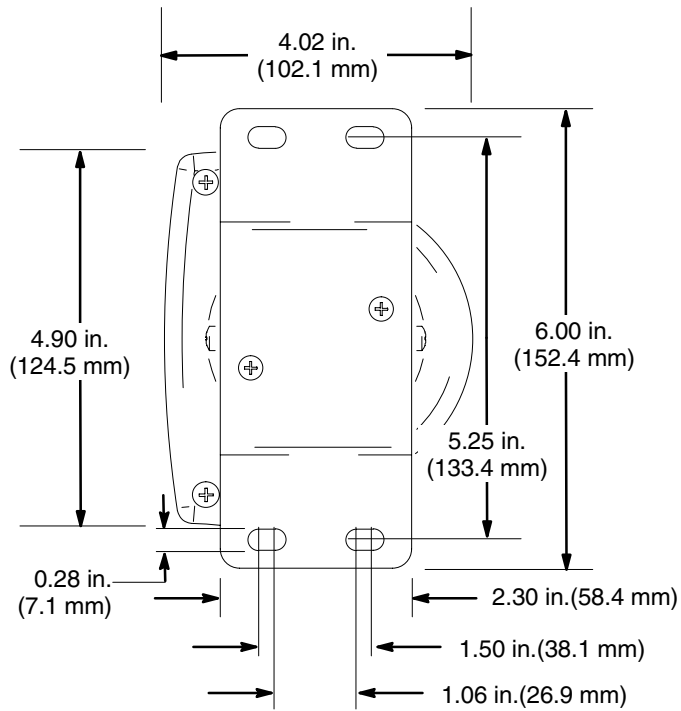


| Model | Pipe Diameter | Height |
|--------|--------------------|---------------------|
| 288666 | 0.50 in. (12.7 mm) | 5.42 in. (137.7 mm) |
| 288667 | 0.75 in. (19.1 mm) | 5.52 in. (140.2 mm) |
| 288668 | 1.00 in. (25.4 mm) | 5.64 in. (143.3 mm) |

Dimensions

Model 288669

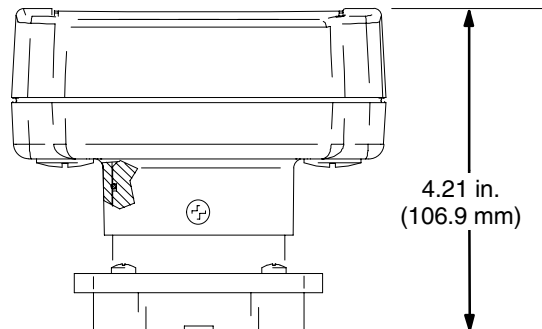
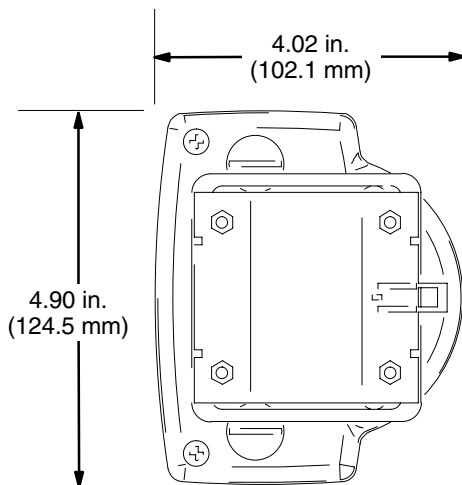
Informer Display, wall mount



9638A

Model 288670

Informer Display, din rail mount



T10077

Technical Data

Display

6 digit, 1 inch (25.4 mm) high LCD display

Keypad

4 button membrane with tactile feedback on 3 buttons

Power Requirements

- 9 VDC internal battery at 2 mA (display on)
- Or 12 to 24 VDC external power supply at 10 mA
- Replaceable fuse, reverse polarity protected

Pulse Input

- 8 VDC at 2.5 mA to 24 VDC at 16 mA
- Current sinking or sourcing
- 1000 pulses/sec. maximum, 50% duty cycle

Control Inputs and Outputs

- Optically isolated, replaceable fuse, reverse polarity and over-voltage protected
- Batch Reset Input
 - 8 VDC at 2.5 mA to 24 VDC at 16 mA
 - Current sinking or sourcing
 - 50 mS pulse width minimum
 - Not active while unit is in “Sleep Mode”—refer to page 39
- Batch Alarm Output
 - 24 VDC, 150 mA maximum
 - Current sinking or sourcing
- User Alarm Output
 - 24 VDC, 150 mA maximum
 - Current sinking or sourcing

RS-485 Communication Port

- Modbus RTU Communication Protocol (Function 3 and 16)
- Not active while unit is in “Sleep Mode”—refer to page 39

K-Factor Value Range

0.01 to 1.0 cc/pulse

Input, Output, Power, and Communication Connections

- Removable terminal block
- Cable Ports: 2 with strain reliefs, 0.312 in. (7.9 mm) diameter cable maximum

Environmental

- Operating temperature: 32° to 140° F (0° to 60°C)
- Storage temperature: –67° to 140° F (–55° to 60°C)
- Humidity: 0 to 95%, non-condensing
- Display housing meets NEMA 12 requirements
- Display housing is solvent resistant

Compliances

Intrinsically safe (Class I, Div. 1, Group D) when installed as shown in Fig. 4, page 10; “Typical Installation: Remote Informer Display in Non-hazardous Area, Meter in Hazardous Area”.

Technical Data

Display Parameters

Display updated in approximately 1/2 sec intervals.

- Grand Totalizer
 - Selectable Units (L, gal, cc, oz)
 - Count Up
 - Backed up to non-volatile memory
 - Maximum displayed value: "999999"
 - Maximum stored value: 429,496,729.5 cc (accessible with Modbus)
- Batch Totalizer
 - Selectable Units (L, gal, cc, oz)
 - Count Up or Down
 - Settable Target
 - Maximum displayed value: "99999.9"
 - Maximum stored value: 429,496,729.5 cc (accessible with Modbus)
 - Auto or Manual Reset
 - Alarm when Target value is reached causes flashing Icon and output active
- Preventative Maintenance Totalizer
 - Selectable Units (L, gal, cc, oz)
 - Count Up
 - Settable Target
 - Maximum displayed value: "99999.9"
 - Maximum stored value: 429,496,729.5 cc (accessible with Modbus)
 - Manual Reset
 - Alarm when Target value is reached causes flashing Icon and output active
- Flow Rate
Display update time: 1 sec.

Sleep Mode

- To conserve battery power, if no external power supply is connected, the Informer will enter Sleep Mode after 5 minutes of no activity on the front panel push buttons.
- The Informer will leave Sleep Mode when flow is detected.

Software Upgrades

Software upgrades are performed by replacing the programmable chip on the circuit board.

Model 243312 Meter

See manual 308778 for meter technical data.

Graco Standard Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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